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March 30, 2018

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

Mr. William Grant
Deputy Commissioner
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
St. Paul, Minnesota 55101-2198

RE: 2017 Demand Side Management Financial Incentive Project
Docket No. E017/M-18-

Annual Filing to Update the Conservation Improvement Project Rider
Docket No. E017/M-18-

2017 Conservation Improvement Project Status Report
Docket No. E017/CIP-16-116.01

Dear Mr. Wolf and Deputy Commissioner Grant:

Enclosed please find Otter Tail Power Company's filing in the above referenced matter which includes:

- Executive Summary
- Summary of Filing
- Petition of Otter Tail Power Company
- Financial Incentive
- Status Report
- Conservation Cost Recovery Adjustment
- Appendix A – Tables
- Appendix B – Third Party Evaluations
- Appendix C – Project Information Sheets

A Certificate of Service is also enclosed. Otter Tail Power Company has served a copy of this filing on all parties listed on the enclosed Service List. If you or Commission Staff have any questions, please contact me at (218) 739-8639 or JGrenier@otpco.com.

Very truly yours,

/s/ JASON GRENIER
Jason Grenier, Manager
Market Planning

jch
Enclosures
By electronic filing
c: Service List

2017 DSM INCENTIVE, FILING TO UPDATE THE RIDER, AND STATUS REPORT EXECUTIVE SUMMARY

On March 30, 2018, Otter Tail Power Company (Otter Tail or the Company) files with the Minnesota Public Utilities Commission (Commission or MPUC) and the Minnesota Department of Commerce, Division of Energy Resources (DER) its annual filing of the Demand Side Management (DSM) Financial Mechanism. The Company is requesting Commission approval of its shared savings incentive of $2,642,360 for 2017.

On March 30, 2018, Otter Tail Power Company files its 2017 Status Report.

On March 30, 2018, Otter Tail also files its annual filing to update the Conservation Improvement Project (CIP) Rider.

Otter Tail would like to emphasize the following points concerning the 2017 Conservation Improvement Program:

- The Company achieved 3.02[1] percent energy savings as a percent of retail energy sales, above our approved goal of 2.41 percent.
- The Company achieved energy savings of 52,584,236 kWh, exceeding goal by 125 percent. Demand savings were 115 percent of goal.
- The cost per kWh for *first year* savings is $0.13 (13 cents) compared to a budgeted cost of $0.18 (18 cents). Costs are in line with historical averages of $0.14 (14 cents).
- Expenditures were under budget (88%) at $6,605,899 based on an approved budget of $7,519,350.
- Net benefits of $23,562,407 were achieved excluding the negative net benefits from assessments.

Requests for Approval

- The Company is requesting approval for $2,642,360 in performance incentives for 2017 CIP activities, a small share of the total net benefits delivered to customers from investments in CIP.
- Otter Tail is requesting to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.
- The Company is requesting the Conservation Cost Recovery Adjustment (CCRA) factor of $0.00600 per kWh be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after October 1, 2018.
- As in prior years, Otter Tail is requesting a variance to Minnesota Rule 7820.3500 (E & K), which require the Fuel Clause Adjustment (FCA) be stated as a separate line item on

[1] Adjusted for one-third energy savings from behavioral change programs.

customer bills. The requested variance would allow the Company to continue to combine the FCA with the CCRA on customer bills.

- The Company is requesting approval of the 2017 CIP Tracker, resulting in a year-end balance of $7,362,345.

Otter Tail has committed resources and developed new, creative approaches in pursuit of higher conservation goals. This pursuit includes an appropriate balance of direct and indirect impact programs. New technologies, delivery mechanisms, and segmentation strategies emphasize Otter Tail's commitment to energy efficiency. Recent accomplishments are particularly noteworthy in the face of new building codes and equipment efficiencies and saturated markets. A consistent regulatory environment is critical to overcoming these challenges as utilities continue to pursue Minnesota's Next Generation Act energy goals. Otter Tail appreciates the support from Minnesota's regulatory agencies as we work together to sustain Minnesota's energy future.

Please note that this filing is available through the eDockets system maintained by the Minnesota Department of Commerce and the Minnesota Public Utilities Commission. Access this document by going to eDockets through the websites of the Department of Commerce or the Public Utilities Commission or going to the eDockets homepage at:

https://www.edockets.state.mn.us/EFiling/home.jsp

Once on the eDockets homepage, this document can be accessed through the Search Documents link and entering in docket number: 16-116.01.

Please contact Otter Tail at 800-493-3299 to request a complete copy of this filing.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Otter Tail Power Company's Annual Filing of the Demand Side Management Financial Incentive Project	Docket No. E017/M-18-
In the Matter of Otter Tail Power Company's Annual Filing to Update the Conservation Improvement Project Rider	Docket No. E017/M-18-
Status Report – 2017 CIP Activities	Docket No. E017/CIP-16-116.01

SUMMARY OF FILING

Otter Tail Power Company (Otter Tail or the Company) is pleased to report its 2017 DSM achievements. CIP program results for 2017 proved to be another successful year for Otter Tail and our customers exceeding the approved 2.41 percent energy savings goal and achieving 3.02 percent energy savings while. delivering nearly $24 million in customer net benefits.

Otter Tail is requesting approval of a financial incentive of $2,642,360 to be approved and recovered through its Conservation Improvement Project (CIP) Tracker Account.

Otter Tail is requesting approval of its proposal to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.

Otter Tail is requesting the Conservation Cost Recovery Adjustment (CCRA) factor of $0.00600 per kWh be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after October 1, 2018.

As in prior years, Otter Tail is requesting a variance to Minnesota Rule 7820.3500 K and Minnesota Rules part 7825.2600, which require the Fuel Clause Adjustment (FCA) be stated as a separate line item on customer bills. The requested variance would allow the Company to continue to combine the FCA with the CCRA on customer bills.

Lastly, Otter Tail is requesting approval of the 2017 CIP Tracker, resulting in a year-end 2017 balance of $7,362,345.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Otter Tail Power Company's Annual Filing of the Demand Side Management Financial Incentive Project	Docket No. E017/M-18-
In the Matter of Otter Tail Power Company's Annual Filing to Update the Conservation Improvement Project Rider	Docket No. E017/M-18-
Status Report – 2017 CIP Activities	Docket No. E017/CIP-16-116.01

PETITION OF OTTER TAIL POWER COMPANY

I. INTRODUCTION AND BACKGROUND

Otter Tail Power Company (Otter Tail or the Company) is requesting approval of a financial incentive of $2,642,360 to be approved and recovered through its Conservation Improvement Project (CIP) Tracker Account.

Otter Tail is requesting approval of its proposal to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.

Otter Tail is requesting the Conservation Cost Recovery Adjustment (CCRA) factor of $0.00600 per kWh be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after October 1, 2018.

As in prior years, Otter Tail is requesting a variance to Minnesota Rule 7820.3500 K and Minnesota Rules part 7825.2600, which require that the Fuel Clause Adjustment (FCA) be stated as a separate line item on customer bills. The requested variance would allow the Company to continue to combine the FCA with the CCRA on customer bills.

Lastly, Otter Tail is requesting approval of the 2017 CIP Tracker, resulting in a year-end 2017 balance of $7,362,345.

On June 15, 1994, Otter Tail filed a petition for a CIP Adjustment to recover costs associated with CIP. On October 18, 1994, the Company filed a Motion to File Amended Petition and Accept Settlement Agreement. On December 23, 1994, the Minnesota Public Utilities Commission (Commission or MPUC) issued an Order Approving Settlement and Proposed CIP Adjustment for Otter Tail.[2] In this Order, the Commission approved a CIP adjustment mechanism to be applied to customers' bills on or after July 1, 1995, which the Company began implementing on July 1, 1995.

On January 27, 2010, the MPUC approved a new shared savings model[3] for 2010 and indicated the new shared savings Demand Side Management (DSM) incentive shall be in operation for the length of each utility's triennial CIP plan.

On August 5, 2016 the MPUC revised the Shared Savings Model with the modifications specific to Otter Tail set forth below:

- Authorize financial incentives for a utility that achieves energy savings of at least 1.0 percent of the utility's retail sales. For a utility that achieves energy savings equal to 1.0 percent of retail sales, award the utility a share of the net benefits.
    - 8.25 percent in 2017,
    - 6.75 percent in 2018, and
    - 4.75 percent in 2019.
- For each additional 0.1 percent of energy savings the utility achieves, increase the net benefits awarded to the utility by an additional 0.75 percent until the utility achieves savings of 1.7 percent of retail sales.
- For savings levels of 1.7 percent and higher, award the utility a share of the net benefits equal to the following Net Benefits Cap.
    - 13.5 percent in 2017,
    - 12.0 percent in 2018, and
    - 10.0 percent in 2019.
- For all utilities, set the following Conservation Improvement Plan (CIP) Expenditure Caps:
    - 40 percent in 2017,
    - 35 percent in 2018, and
    - 30 percent in 2019.
- The costs of any mandated, non-third-party projects (e.g., the 2007 Next Generation Energy Act assessments, University of Minnesota Initiative for Renewable Energy and the Environment costs) shall be excluded from the calculation of net benefits and energy savings achieved and incentive awarded.

[2] Docket No. E017/M-94-539

[3] Docket No. E,G999/CIP-08-133

- Costs, energy savings, and energy production related to Electric Utility Infrastructure Costs, solar installation, and biomethane purchases shall not be included in energy savings for DSM financial incentive purposes.

II. REQUEST FOR APPROVAL

Financial Incentive Filing

Otter Tail respectfully requests that a financial incentive of $2,642,360 be approved and recovered through its CIP Tracker Account.

Otter Tail is requesting approval of its proposal to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.

Details of the incentive calculation and corresponding evaluations of direct impact projects are included in the attached report under the Section entitled "FINANCIAL INCENTIVE."

Conservation Improvement Project Rider

The Company is requesting the Conservation Cost Recovery Adjustment factor of $0.00600 be reflected on customers' bills through the Resource Adjustment starting with bills rendered (dated) on and after October 1, 2018.

III. LEGAL AUTHORITY

The Petition for approval of Otter Tail's Financial Incentive Filing is submitted in accordance with Minn. Stat. § 216B.16, subd. 6c. The Conservation Improvement Project Rider is submitted in accordance with the Miscellaneous Tariff rules.

IV. REQUEST FOR VARIANCE TO MINNESOTA RULES

Otter Tail requests a variance to Minnesota Rules 7820.3500 K and Minnesota Rules part 7825.2600, which require that the FCA be stated as a separate line item on customers' bills. The requested variance would allow the Company to continue to combine the FCA with the Conservation Improvement Adjustment on customer bills.

Minnesota Rules 7829.3200 authorizes the Commission to grant a variance to its rules when (1) enforcement of the rule would impose an excessive burden on the applicant, (2) the variance would not adversely affect the public interest, and (3) the variance would not conflict with standards imposed by law. Otter Tail believes the criteria for granting variances are met since the

Company has been using the combined Resource Adjustment since July 1995, and customers have become familiar with the single-line item on their bill.

The continuation of the variance would not adversely affect the public interest and may avoid customer confusion if the bill presentment was altered at this time.

And finally, there are no statutory provisions that would prohibit the variance; therefore, the requirement may be varied pursuant to Minnesota rules 7829.3200.

Once approved by the Commission, the Company will be notifying its Minnesota customers of the new CIP surcharge directly on its customers' bills. A surcharge notification will be printed on the back of each bill on the billing date following closest to October 1, 2018. In general, the notification will state "Beginning October 1, the Resource Adjustment includes a CCRA factor of $0.00600/kWh that has been applied based on the Commission's (date) order."

V. MISCELLANEOUS FILING AND REGULATORY REQUIREMENTS

A. All correspondence with respect to this filing should be sent to:

Jason Grenier
Otter Tail Power Company
215 South Cascade Street
P.O. Box 496
Fergus Falls, MN 56538-0496
(218) 739-8639 Phone
(218) 739-8941 FAX

B. The effective date of the CIP Rider is October 1, 2018. The effective date of the other filings is the date of Commission approval.

C. Otter Tail Power Company agrees that the notice and comment periods set forth in the Miscellaneous Tariff Filing rules control the time frame for processing this type of filing.

D. The reason for the filing and its impacts is explained above and in the attached report.

E. Minn. Rules Ch. 7690 contains the requirements and procedures for CIP filings. Minn. Stat. §§ 216B.2401, 216B.241, and 216B.2411 contain provisions utilities must meet in CIP. All compliance points are addressed in this section.

Statutory Requirements

2017 Minimum Spending Requirement

Minn. Stat. § 216B.241, requires that 1.5 percent of the Company's electric gross operating revenues be spent on CIP. Otter Tail's spending in relation to approved minimum spending is as follows:

Minimum Spending Requirement	$ 2,297,210
Approved Budget	$ 7,519,350
2017 Actual Spending	$ 6,605,899

2017 Minimum Energy Savings Goal

The Company has complied with Minn. Stat. § 216B.241 which sets the minimum energy savings goal of 1.5 percent of MWh sales, determined as a percent of 2013-2015 weather normalized sales.

Energy savings goal @ 1.5%	26,128,129 kWh
Approved Energy Savings Goal	41,908,098 kWh
2017 Actual Energy Savings	52,584,236 kWh

2017 Low-Income Spending Requirement

The Company has complied with Minn. Stat. § 216B.241, subd. 7 requiring utilities to spend 0.2 percent of residential electric gross operating revenues on low-income programs.

Low-income minimum spend @ 0.2%	$ 110,165
Low-income approved budget	$ 150,000
Low-income actual spend	$ 161,155

2017 Research and Development 10 Percent spending cap

The Company has complied with Minn. Stat. § 216B.241, subd. 2c that limits spending on Research and Development to 10 percent of the minimum spending requirement.

Minimum Spending Requirement	$ 2,297,210
10 percent R&D Spending Cap	$ 289,129
2017 Actual R&D Spending	$ 120,845

Distributed Energy Resource Five Percent Spending Cap

The Company has complied with Minn. Stat. § 216B.2411, subd. 1(a) that allows utilities to spend up to five percent of the utility's minimum spending requirement on distributed generation project.

Lighting Use and Recycling Programs

The Company has complied with Minn. Stat. § 216B.241 that requires utilities to invest in projects that encourage the use of energy efficient lighting and reclamation and recycling of spent fluorescent and high intensity discharge lamps. Otter Tail met this requirement through its commercial and residential lighting programs.

Sustainable Buildings Certification

The Company has complied with Minn. Stat. § 216B.241, subd. 1f(c) that requires utilities to include in their CIP plans projects that facilitate professional engineering verification to qualify a building as ENERGY STAR labeled, Leadership in Energy and Environmental Design (LEED) certified, or Green Globes certified. The Company's Commercial Design Assistance project facilitates sustainable building labeling and certification.

Sustainable Building 2030 Standards

The Company has complied with Minn. Stat. § 216B.241, subd. 9(e) that requires utilities to develop conservation improvement projects to support attaining energy efficiency goals consistent with Sustainable Buildings 2030 (SB 2030) standards. The Company's Commercial Design Assistance project supports the SB 2030 standards.

Triennial Decision Requirements

The Company has complied with any additional requirements established in the DER Deputy Commissioner's Decision on November 3, 2016.

Budget Modifications

On October 10, 2013, the Deputy Commissioner of the DER issued an Order giving utilities budget flexibility criteria by segment rather than individual program budgets. Under this requirement, utilities are required to provide a letter for permission to exceed the overall budget for a segment by 25 percent or more.

Otter Tail did not request a budget modification in 2017.

Measurement and Verification (M&V) Protocols for Large Custom CIP Projects.

On July 23, 2008, the Deputy Commissioner approved M&V Protocols for Large Custom CIP Projects. The protocols apply to custom projects that have savings greater than one GWh and are initiated after April 1, 2008.

Otter Tail had no custom projects requiring M&V in 2017.

CIP Employee Related Expenses

In its November 5, 2010 Order in Docket No. E017/M-10-220, the Commission agreed with and adopted the recommendations of the DER regarding reporting of employee expenses in utility status reports. The DER's recommendation included guidelines for public utilities to report employee related expenses that have been charged as Conservation Improvement Program (CIP) expenses. Public utilities must clearly identify all expenses in the four sections below:

- Travel expenses
- Employee meals
- Entertainment expenses, and
- Employee awards.

The DER further recommended, *"to limit the impacts on ratepayers, that these types of expenses remain a minor part of the overall annual budget or expenses, with a cap of 0.5 percent of total annual budgets or expenses."*

Otter Tail Power summarizes the Company's 2017 employee expenses as follows:

Section	Amount	Description
Travel Expense	$22,030	Travel expenses include mileage, rental vehicles, taxi services, and air fare for offsite meetings, customer site visits, and travel to training and conferences. All travel expenses are directly related to CIP program design, training, delivery, and promotion.
Lodging Expenses	$10,093	Lodging expenses include any lodging used for customer site offsite meetings, customer site visits, and lodging for training and conferences. All lodging expenses are directly related to CIP program design, training, delivery, and promotion.
Meal and Entertainment Expenses	$5,756	Meal and entertainment expenses include employee meals while attending offsite meetings, and meals while attending training and conferences. All meal and entertainment expenses are directly related to CIP program design, training, delivery, promotion, and review.

Miscellaneous Expenses	$305	Majority of miscellaneous expenses consist of cell phone charges to test and maintain the mobile connectivity of Otter Tail's customer rebate processing (SMRT) system. This effort supports Energy Management Representatives working onsite with customers. The remaining expense consists of recognition of one employee for exceptional performance in working with customers and helping the Company achieve high energy savings.
TOTAL	$41,048	

Total 2017 employee expenses that were included in Otter Tail's CIP Tracker were $41,048. The total employee expense is 0.62 percent of the total 2017 CIP Tracker expenses of $6,605,899.

Otter Tail's total employee expense exceeds the DER recommended employee expense of 0.5 percent of total CIP expenses by $8,019. Otter Tail believes the recommended cap of 0.5 percent of CIP expenses is not reasonable when considering the 153 communities spread across 25,700 square miles of Minnesota service territory. Customers are not clustered in metro areas. In addition, stakeholder meetings, Commission hearings, and regulatory consultation all typically occur in the Minneapolis/St. Paul area. Otter Tail employees frequently travel hundreds of miles a day meeting with customers for the development and promotion of CIP. Otter Tail respectfully asks the DER to consider these circumstances when reviewing Otter Tail's employee expenses.

Incorporation of the Average Savings Method (ASM) to account for Behavioral Savings.

On April 26, 2012, in Docket Nos. E,G999/CI-08-133 and E017/CIP-10-356, the Deputy Commissioner of the Department of Commerce made a decision in how to count energy savings from behavioral projects in CIP programs and the Shared Savings Demand-Side Management Financial Incentive calculations. The Commissioner ordered Average Savings Method (ASM) proposed by Staff be used with a three-year minimum lifetime, effective with the 2014 program year.

Otter Tail has implemented the Deputy Commissioner's decision for calculating the energy savings for behavioral projects. The results have been incorporated in the energy savings results counted towards the 1.5 percent energy savings goal.

VI. CONCLUSION

Based on information provided throughout this filing, Otter Tail requests the following:

From the MPUC:

1. Approval of the 2017 DSM Financial Incentive, totaling $2,642,360.
2. Approval of Otter Tail's proposal to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.
3. Approval of the 2017 CIP Tracker, resulting in a year-end balance of $7,362,345
4. Approval to implement the CCRA factor of $0.00600/kWh reflected on customers' bills through the Resource Adjustment starting with bills rendered on and after October 1, 2018.
5. Approval of a variance to Minnesota Rule 7820.3500 to allow Otter Tail to continue to combine the FCA with the Conservation Improvement Adjustment on customer bills.

From the Division of Energy Resources:

1. Approval of the individual 2017 CIP Projects, Evaluations, Energy and Demand Savings.
2. Approval of Otter Tail's response to various DER orders as indicated in the Miscellaneous Filing and Regulatory Compliance section of this filing.

If there are any questions concerning this filing, please contact Jason Grenier at (218) 739-8639 or JGrenier@otpco.com.

Dated: March 30, 2018

Respectfully submitted,
OTTER TAIL POWER COMPANY
By: */s/ JASON GRENIER*

Jason Grenier
Manager, Market Planning
Otter Tail Power Company
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Financial Incentive

FINANCIAL INCENTIVE

Otter Tail Power Company (Company or Otter Tail) hereby submits this filing in compliance with the Minnesota Public Utilities Commission's (Commission or MPUC) January 27, 2010 Order Approving Demand Side Management (DSM) Financial Incentive Plans.[1]

The filing consists of the following items.

- Discussion of 2017 Financial Incentive
- Financial Incentive - Statutory Criteria
- Cost Comparisons / Net Benefits
- Request for Approval

Tables referenced in this Financial Incentive are located in Appendix A and include the following information.

Table 1	Calculation of Carrying Charge – 2017 CIP Tracker
Table 2	2017 Incentive Mechanism
Table 3	2017 Project Costs, Savings, and Benefits
Table 4	2017 Benefit Cost Ratios
Table 5	2017 CIP Program Status Report
Table 6	2017 CIP Program Status Report – Costs per kW & per kWh

[1] Docket No. E,G999/CI-08-133.

I. DISCUSSION OF 2017 FINANCIAL INCENTIVE

The current shared-savings financial incentive plan awards Otter Tail Power Company a small share of the net benefits from investments in energy efficiency. The plan links the incentive to the utilities' performance in achieving cost-effective energy efficiency.

INCENTIVE CALCULATION

On January 27, 2010, the MPUC approved a new shared savings model[2] for 2010 and indicated the new shared savings DSM incentive shall be in operation for the length of each utility's triennial Conservation Improvement Project (CIP) plan. Otter Tail's triennial plan is approved for 2017-2019.

On August 5, 2016, the MPUC issued an order adopting additional modifications to the Shared Savings Model recommended by the DER. The MPUC's order incorporated the modifications set forth below. Included are the modifications that are specific to Otter Tail:

- Authorize financial incentives for a utility that achieves energy savings of at least 1.0 percent of the utility's retail sales.
- For each additional 0.1 percent of energy savings the utility achieves, increase the net benefits awarded to the utility by an additional 0.75 percent until the utility achieves savings of 1.7 percent of retail sales.
- For savings levels of 1.7 percent and higher, award the utility a share of the net benefits equal to the Net Benefits Cap of:
    - 13.5 percent in 2017,
    - 12.0 percent in 2018, and
    - 10.0 percent in 2019.
- For all utilities, the following Conservation Improvement Plan (CIP) Expenditure Caps are applied:
    - 40 percent in 2017,
    - 35 percent in 2018, and
    - 30 percent in 2019.
- The costs of any mandated, non-third-party projects (e.g., the 2007 Next Generation Energy Act assessments, University of Minnesota Initiative for Renewable Energy and the Environment costs) shall be excluded from the calculation of net benefits and energy savings achieved and incentive awarded.
- Costs, energy savings, and energy production related to Electric Utility Infrastructure Costs, solar installation, and biomethane purchases shall not be included in energy savings for DSM financial incentive purposes.

[2] Docket E,G999/CI-08-133.

As part of this March 30, 2018, filing under section II, the Company is providing the 2017 proposed incentive. The following steps are used in the incentive calculation:

1. The 2017 incentive is calculated using the model provided by the Department and detailed in Appendix A, Table 2.
2. At year-end, the utility calculates the net benefits for the CIP projects based on actual participation and costs. The net benefits are the avoided costs less the total CIP costs, including both direct and indirect projects.
3. Appendix A, Table 3 lists the 2017 CIP Programs, each as proposed and approved by the Department, and each with actual 2017 results. Also listed are total program costs, resulting benefits, and net benefits for each program and as a total CIP Program.
4. **Actual energy savings was 52,497,167 kWh, excluding Made in Minnesota and the Company's Publicly-Owned Property (POP) Solar and Company-Owned Street and Area Lighting (Street Lighting) programs' allocated savings, or 3.01 percent of historic average retail sales, and total net benefits are calculated to be $23,626,518, excluding assessments, House Therapy, POP Solar, and Street Lighting.** The 2017 results for energy savings, costs, and net benefits are entered in the post-year financial incentive tool as shown in Appendix A, Table 2.
5. Appendix A, Table 4 outlines the benefit/cost ratios for each 2017 program. Figures are listed for each project "as filed" as part of the 2017-2019 CIP Triennial Filing and "as actual" reflecting 2017 actual participation, savings, and costs.
6. As detailed in Appendix A, Table 2, the total incentive amount requested is **$2,642,360.**

II. FINANCIAL INCENTIVE - STATUTORY CRITERIA

Minn. Stat. §216B.16, subd. 6c(b), sets forth four statutory criteria with respect to approval by the Minnesota Public Utilities Commission of utility financial incentive plans for energy conservation improvements. In approving incentive plans, the Commission shall consider:

1. whether the plan is likely to increase utility investments in cost-effective energy conservation.
2. whether the plan is compatible with the interest of utility ratepayers and other interested parties.
3. whether the plan links the incentive to the utility's performance in achieving cost-effective conservation.
4. whether the plan is in conflict with other provisions of this chapter.

Consistent with the Commission's January 27, 2010 Order Approving Demand Side Management Financial Incentive Plans in Docket No. E,G999/CI-08-133, the following discussion describes how Otter Tail's proposed 2017 Demand Side Management financial incentive in the present docket is consistent with each of these statutory criteria.

Otter Tail's financial incentive mechanism is consistent with the considerations set forth by the Commission as follows:

1. Increase investments: The incentive mechanism encourages increased utility investment in cost-effective conservation, recognizing higher incentives for greater net benefits.
2. Interest of ratepayers and others: The current mechanism is in the interest of ratepayers because it awards utilities a percentage of net benefits achieved. The mechanism does not award the incentives for simply complying with statutory spending, but encourages additional cost-effective energy-efficiency investment, which is in the ratepayer's interest.
3. Links incentive to performance: The current incentive is a shared savings mechanism that awards utilities a share of the net benefits from investments in energy efficiency. There is a direct link between the amount of the incentive and the utility's performance of achieving cost-effective efficiency. As cost-effectiveness increases, net benefits increase, and thus, the incentive increases until the utility reaches the expenditure cap.
4. Conflict with other provisions: Otter Tail does not believe the current incentive conflicts with other provisions of law. It does not result in unjust or unreasonable rates since the mechanism awards for cost-effective energy efficiency at a cost less than supply side options.

III. COST COMPARISONS / NET BENEFITS

In 2017, Otter Tail's average first year cost per kWh saved was 13 cents, which is equivalent to the five-year average of 14 cents. As noted in the Table 1, the average first year costs per kWh range have remained relatively consistent.

Table 1: History of Otter Tail's CIP Achievements, Tracker, and Incentives (2013-2017)

	2013	2014	2015	2016	2017
DSM Financial Incentive	$4,026,600	$2,957,972	$4,257,105	$5,031,678	$2,642,360
CIP Expenditures	$5,259,625	$5,188,931	$6,105,445	$7,770,781	$6,605,899
Achieved Energy Savings (kWh)	35,792,002	33,805,392	48,652,628	57,504,891	52,497,167
Average Cost per kWh Saved	$0.15	$0.15	$0.13	$0.14	$0.13

NET BENEFITS

The definition of "net benefits" used in the financial incentive calculation is the total utility benefits less the total utility costs for the entire CIP portfolio for a single year. These figures are derived from a single year (2017) benefit/cost analysis using DSMore™ software. The utility benefits are aggregated for the lifetime of all CIP energy efficiency measures, discounted back to 2017 dollars using the utility discount rate of 7.51 percent for the utility test as approved in the 2016 General Rate Case and 2.68 percent for the societal test as approved in the 2017-2019 CIP filing.

As shown in Table 3 of Appendix A, the estimated net benefits for the 2017 Proposed CIP are $14,042,859. Additional details of the total costs and the total benefits from benefit/cost analysis of the 2017 Proposed CIP portfolio include:

Program Costs - Proposed 2017**	
Delivery/Implementation/Administration Costs	$4,407,396
Incentives	$3,111,954
Total Costs	$7,519,350
Program Benefits - Proposed 2017*	
Avoided T&D Electric	$4,530,373
Cost-Based Avoided Electric Production	$11,893,741
Cost-Based Avoided Electric Capacity	$5,138,095
Cost-Based Avoided Ancillary	$0
Total Benefits	$21,562,209
Net Benefits - Proposed 2017	$14,042,859
Benefit/Cost Results - Proposed 2017	2.87

* Benefits are based on lifetime benefits, discounted back to 2017 dollars using 8.61 percent utility discount rate.
** Costs include assessements.

As shown in Table 3 of Appendix A, the actual net benefits of $23,301,346 for 2017 CIP are higher than the proposed net benefits. Additional details of the total costs and the total benefits from the DSMore analysis of the 2017 Actual CIP portfolio include:

Program Costs - Actual 2017**	
Delivery/Implementation/Administration Costs	$2,826,489
Incentives	$3,779,411
Total Costs	$6,605,899
Program Benefits - Actual 2017*	
Avoided T&D Electric	$6,724,822
Cost-Based Avoided Electric Production	$16,296,852
Cost-Based Avoided Electric Capacity	$6,885,572
Cost-Based Avoided Ancillary	$0
Total Benefits	$29,907,246
Net Benefits - Actual 2017	$23,301,346
Benefit/Cost Results - Actual 2017	4.53

* Benefits are based on lifetime benefits, discounted back to 2017 dollars using 7.51 percent utility discount rate.
** Costs include assessements.

CIP Cost Breakdown - 2017				
	Proposed Costs		Actual Costs	
Delivery	$4,407,396	59%	$2,826,489	43%
Incentives	$3,111,954	41%	$3,779,411	57%
Total CIP Costs	$7,519,350	100%	$6,605,899	100%

IV. OTTER TAIL'S CARRY FORWARD PROPOSAL

Otter Tail's approved 2017 CIP plan included spending of $1,303,846 for implementation of a company-owned street and area LED light project. To implement the project, Otter Tail needed approved tariff sheets and rate recovery from the MPUC. Otter Tail filed for approval of these items on February 22, 2017, in Docket No. E017/M-17-152. The MPUC issued an order for approval of Otter Tail's rates and adjusted spending and recovery budget on December 13, 2017. Because of this, Otter Tail was unable to spend any dollars for implementation of the project in 2017. Although Otter Tail's energy savings for 2017 resulted in an outstanding 3.01 percent of system sales – a record for Otter Tail – without the LED program approved for implementation in 2017, the new spending cap rule significantly reduced the Company's CIP performance financial incentive.

Based on Otter Tail's 2017 results and actual net benefits of $23,626,518, the Company would have realized a financial incentive of $3,189,580. However, a spending cap which limits the financial incentive to 40 percent of spending resulted in a 2017 financial incentive of $2,642,360, a reduction of $547,220. To realize a financial incentive of $2,642,360, Otter Tail would only need $19,573,036 net benefits derived from 43,490,493 kWh of energy savings. Otter Tail proposes to only claim the energy and net benefits needed to achieve the 2017 financial incentive and carry-forward the remaining net benefits and kWh energy savings into 2018 achievements, reported on April 1, 2019. Under this proposal, Otter Tail will not receive the full $547,220 from 2017, instead the Company proposes to carry the incremental energy and net benefits forward and apply them towards the 2018 financial incentive. If the Company achieves the 1.7 percent savings level in 2018 the corresponding financial incentive from 2017 activities would be an additional $486,418 in financial incentive, pending MPUC approval. This calculation was based off 12 percent of net benefits for 2018 results but does not consider 2018 spending caps which could limit the 2018 financial incentive further. Table 2 below illustrates the proposed impacts:

Table 2	2017 CIP Actual Results	2017 Adjusted CIP Results	2017 Results Proposed to Carry-forward to 2018
Energy Savings (kWh)	52,497,167	43,490,493	9,006,674
Net Benefits	$23,626,518	$19,573,036	$4,053,482
Program Spending	$6,605,899	$6,605,899	
Savings as % of Historic Sales	3.01%	2.50%	
Net Benefits Cap for Fin. Incentive	13.5%		12.0%
Financial Incentive from Net Benefits	$3,189,580		$486,418
Financial Incentive after Spending 40% Cap	$2,642,360	$2,642,360	

Otter Tail believes this is a reasonable approach that recognizes Otter Tail's high level of achievement in 2017, mitigates the issue of the LED street light program not being eligible for expenses in 2017, and is supported by Minnesota state statute.

Minn. Stat. §216B.241, subd. 1c(b), sets forth an option for utilities to carry-forward savings. An excerpt from the statute is as follows:

> *.....A utility or association may elect to carry forward energy savings in excess of 1.5 percent for a year to the succeeding three calendar years, except that savings from electric utility infrastructure projects.....*

Consistent with the statute, Otter Tail plans to carry-forward sales that are above the 1.5 percent threshold. Table 1 above shows that even after Otter Tail carries forward 9 million kWh from 2017 to 2018, the Company will still realize 2017 energy savings at 2.50% of historic system sales. Net benefits and energy savings go hand-in-hand; it is not possible to have energy savings without corresponding net benefits. Otter Tail believes carrying the net benefits forward with the energy savings is allowed under statute.

Otter Tail plans to carry-forward these savings in line with the Deputy Commissioner of the Department's February 20, 2018 Decision, in Docket No. E,G999/CIP-17-586, outlining the proper methodology for utilities to use the carry-forward provision. Otter Tail has included in this filing the full 2017 energy savings and plans make the adjustment to the 2018 Status Report and financial incentive filing to be filed April 1, 2019.

Otter Tail's proposal is also consistent with Minn. Stat. §216B.16, subd. 6c(b), since it supports an increase in cost-effective utility investments, links the utility's performance to achieving cost-effective conservation, and does not conflict with other provisions of Minn. Stat. §216B.16.

V. REQUEST FOR APPROVAL

Financial Incentive Filing

Otter Tail respectfully requests the MPUC to approve the following items:

1. The 2017 CIP performance financial incentive amount of $2,642,360 be recoverable through its CIP Tracker Account.
2. Otter Tail's proposal to carry-forward energy savings and associated net benefits to be claimed in the Company's 2018 CIP performance financial incentive filing.

If there are any questions concerning this filing, please contact Jason Grenier at (218)739-8639 or JGrenier@otpco.com.

Dated: March 30, 2018

Respectfully submitted,
OTTER TAIL POWER COMPANY

By: */s/ JASON GRENIER*

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Status Report

Status Report

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STATUS REPORT - 2017 CIP PROGRAMS

The 2017 Conservation Improvement Program (CIP) Status Report has been combined with the 2017 Financial Incentive Filing, produced annually on April 1. The Status Report covers all 2017 programs, including direct impact, indirect impact, and miscellaneous programs. Participation, program costs, and energy and demand savings for all programs are outlined in Appendix A, Table 5.

Direct Impact Projects

Residential

- Air Conditioning Control
- Appliance Recycling
- Energy Star Lighting
- Electronically Commutated Motors
- Energy Feedback
- Heat Pumps
- Home Insulation
- Home Transformer
- School Kits
- Smart Thermostats
- Water Heater Store & Save

Low-Income

- House Therapy

Commercial

- Adjustable Speed Drives
- Air Conditioning Control
- Commercial Design Assistance
- Commercial Direct Install
- Compressed Air Efficiency
- Custom Efficiency Grants
- Heat Pumps
- Commercial & Industrial Focused Efficiency
- Lighting – Retrofits
- Lighting – New Construction
- Midstream Commercial Kitchen Equipment
- Motors
- Recommissioning

- Refrigeration
- Roof Top Unit Efficiency

Other

- Company-Owned Street & Area Lighting
- Publicly Owned Property Solar

Indirect Impact Programs / Regulatory Requirements

- Advertising & Education
- Compressed Air Audits
- Financing
- Implementation & Training
- Program Development
- PUC / Regulatory (NGEA) Assessments
- Made in Minnesota Solar Assessment
- Transmission & Distribution Cost Study

Miscellaneous / Inactive Program Costs

- Accounting Adjustments
- Town Energy Challenge Pilot
- PC Power Supply
- Otter Tail Power CIP Projects
- Carrying Charges

DIRECT IMPACT – RESIDENTIAL

AIR CONDITIONING CONTROL

The CoolSavings air conditioning control program targets residential customers with central air conditioning. Customers are encouraged to enroll in the program and receive a $7/month credit for each of the four summer months (June-September).

Otter Tail Power Company (the Company, Otter Tail) promotes air conditioning control using various resources listed below:

- Bill inserts sent to customers in February, April, and December 2017.
- Radio campaign conducted, including one in conjunction with the Advertising and Education program.
- Customer care booklet sent to all new customers.
- Hero-spots on the Company website during April and May.
- Return envelope spot in March and April
- *Programs and services guide* provided to contractors and employees.
- Print advertisement to regional home magazine.
- Presentations and literature distribution at workshops.
- Billboard spot in February.
- Annual and monthly service rep training.
- Agency training for House Therapy contractors.
- Brochures available upon request.
- Program, rate, and rebate page described within the Company's web site.

In 2017, Otter Tail controlled air conditioning 13 days totaling 18 hours and 51 minutes. This control time is within the 300-hour control limit in the air conditioning rider.

This program has been approved for continuation in the 2018 CIP. The monthly customer credit will increase from $7 to $8.25 in 2018 as approved in Otter Tail's recent general rate case.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Air Conditioning Control (R)	**Actual**	**Proposed**	**% of Goal**
Participation	2,627	4,244	62%
Budget $	$56,552	$85,000	67%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Air Conditioning Control (R)	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	81,466
Demand Savings – kW	1,942.63

APPLIANCE RECYCLING

The Appliance Recycling program offers residential customers a $50 incentive to recycle inefficient but operating refrigerators and freezers at no cost to the customer. In April 2017, we began offering four LED bulbs in addition to the $50 recycling incentive to participants. This resulted in refreshed interest in the program, which is reflected in participation. We are planning to continue the additional promotion in 2018.

Otter Tail promotes appliance recycling using various resources:

- Bill inserts targeted at residential customers in April, June, and August.
- Radio campaign on targeted Minnesota stations in May and September.
- Web page content including hero ads placed on the Company's home page and program information including instructions about how to schedule appliance pickup.
- Billboard spot in July and August.
- Inclusion as appropriate on Home Energy Reports mailed to customers through the Energy Feedback program.
- Inserts available upon request.

This program has been approved for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Appliance Recycling	**Actual**	**Proposed**	**% of Goal**
Participation	388	230	169%
Budget $	$92,291	$65,000	142%

Evaluation Methodology

The Company uses figures from the Technical Reference Manual (TRM) for calculating savings for the removal and recycling of second household refrigerators and freezers.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Appliance Recycling	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	401,709
Demand Savings – kW	57.44

ENERGY STAR LIGHTING

The Energy Star Lighting program aims to increase the market share for ENERGY STAR qualified LEDs, while educating both consumers and retailers about the benefits of energy efficient lighting. Promotion of LEDs was successfully expanded and will continue in 2018.

Through the services of Wisconsin Energy Conservation Corporation (WECC), Otter Tail offers the Energy Star Lighting campaign with the following objectives:

- Leverage manufacturer dollars for instant consumer rebate incentives of up to $2.32 per LED.
- Leverage advertising dollars for retailer.
- Highlight Otter Tail's sponsorship of the promotions through press releases, in store displays, and special public relations events and LED bulb sales, and;
- Implement the program with seamless coordination with other Energy Star Lighting promotions throughout Minnesota and the Midwest.

There were approximately 10 retailers in our service territory who participated in the 2017 campaign, contributing to distribution of approximately 129,587 bulbs.

Otter Tail promotes the Energy Star Lighting program using various resources listed below:

- Bill inserts.
- Radio spots.
- The Company's web site.
- On-site promotion at the location of a participating retailer.
- Included information on energy efficient lighting on Home Energy Reports mailed to customers through the Energy Feedback program.
- Factsheets available upon request.

In 2017, the Company included a four pack of LED bulbs for every customer who recycled either a refrigerator or freezer. This added to the education of our customers about LED bulbs and increased the total bulb distribution.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Be Bright	**Actual**	**Proposed**	**% of Goal**
Participation	129,587	100,000	130%
Budget $	$336,283	$400,000	84%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Be Bright	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	4,721,888
Demand Savings – kW	551.27

ELECTRONICALLY COMMUTATED MOTORS

The Electronically Commutated Motors (ECM) program encourages customers to install an efficient ECM as a part of a new heating system rather than selecting a system with a lower efficiency motor option. ECMs use significantly less electricity to deliver warm air from the furnace and cool air from the central air conditioner throughout a home. They can result in up to 75 percent less energy used than standard fan motors.

ECM efficiency was marketed to customers and contractors through:

- Bill inserts targeted at residential customers.
- *Programs and services guide* provided to contractors and employees.
- Program information on the Company's web page, www.otpco.com.
- Training material covered with service representatives in annual and monthly training.

Otter Tail provides customers a $100/unit rebate when contractor installed. The ECM program

has been approved for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Electronically Commutated Motors	**Actual**	**Proposed**	**% of Goal**
Participation	227	120	189%
Budget $	$38,789	$30,000	129%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Electronically Commutated Motors	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	176,818
Demand Savings – kW	47.83

ENERGY FEEDBACK

The Energy Feedback program consists of two program components: Aclara Technologies Energy Prism Home Energy Analyzer (HEA) and an Opower Home Energy Report (HER) project. These behavior-based energy savings programs aim to maximize energy savings achieved through behavior changes that result from providing customers comparative energy use information.

The HEA component is an opt-in program that provides feedback to residential users through an online interface. The HER project is an opt-out program based on direct mail delivery of up to four comparative energy usage reports to participating Minnesota residential customers each year.

Home Energy Analyzer- HEA enables users to understand their individual energy use through online presentation of 25 months of billing history, analytic tools, and calculators. It includes a "My Energy" portal that includes a home energy profile, into which details about the age and size of home, number and type of appliances in use, insulation and window features, heating

system, and energy consumption are compiled and included in energy analysis. Participants that complete the energy profile are presented with performance benchmarks, comparing their energy use to similar homes. Customers can set their money savings goal and select an energy savings theme that reflects their approach to energy savings and are presented options that will help them achieve their desired energy savings goal.

Because it is an opt-in tool total user participation in HEA is lower than HER but consists of a more highly motivated group of customers who have chosen to use the tool.

Minnesota residential customers were encouraged to participate in use of the HEA tool in the following ways:

- Through the Company's web site, including hero-spot ads presented on the home page for three months, a program page, and a demo tool within the website.
- Messaging presented on service statements during one billing period.
- Bill inserts sent five times to all residential customers.
- Customer service guide sent to all new customers.
- Online services brochure sent to all new customers.
- *Programs and services guide* sent to contractors and employees.

As the Company's web site is increasingly being accessed by customers through mobile devices, the HEA accessibility and performance has become an issue. Consequently, program participation has declined somewhat. For this reason, as well as due to changes to the Company's web back end, the Company is working with the vendor to upgrade the HEA tool. This upgrade began in late 2017 and is slated for completion in 2018.

Opower Home Energy Reports – The HER program delivers comparative energy usage information to selected Minnesota residential customers. Program participants received up to four home energy reports during 2017.

Each Home Energy Report contained various personalized components, including:

- Comparisons of recent energy use to a group of 100 similar homes.
- Comparison of recent energy use to current use, tracking changes over time.
- Targeted energy efficiency tips selected based on the home's energy use pattern and season, and household heating type.

Participation in the program is defined as any Minnesota residential customer that received one or more personalized Home Energy Report during 2017 or who received reports in a previous year, has an active electric service account, and has not opted out of the program.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Energy Feedback	**Actual**	**Proposed**	**% of Goal**
Aclara HEA Participation	2,272	2,500	91%
Opower HER Participation	27,443	28,000	98%
Budget $	$304,434	$302,100	101%

Evaluation Methodology – Home Energy Analyzer

Annually since 2010, Otter Tail contracted with Integral Analytics to perform an evaluation of the Bill Analyzer project. The methodology used in 2010 was approved by DER staff. The evaluation relied upon a statistical analysis of the actual billed electricity consumption before and after participation in the HEA project.

The evaluation found that savings varied by the component or level of the HEA tool the participant used. In addition to calculating the savings by component or level, Integral Analytics again calculated an average overall savings calculation. In 2017, the evaluation demonstrated an average 648 kWh per year as measured at the meter.

In addition to analysis of post-participation usage compared to the customer's own pre-participation usage, Integral Analytics completed an analysis of the participant group against a randomly selected control group.

The HEA evaluation is included in Appendix B-Third Party Evaluations.

Evaluation Methodology – Opower HER

The 2017 evaluation of energy savings for the Opower HER program was completed by Opower using integrated data from a variety of sources that allow for detailed analysis of energy savings results. The evaluation is included in Appendix B - Third Party Evaluations. The data included:

1. **Consumption data:** Otter Tail provided weekly updates of monthly consumption data for all households in the program, including historical consumption information.

2. **Parcel data:** Opower received data, to the extent available from a third-party vendor, about household parcels, including house size, age and value, heating and cooling type, as well as pool and hot tub data. Parcel data elements for age and value are static. Other data elements may be updated at the customer's request.

3. **Demographic data:** Opower received demographic data, to the extent available from a third-party vendor, about participants, including household income, age of occupant(s), number of occupants, and an owner/renter indicator. The number of occupants is a field is available for update at customer's request.

Opower's analysis of the Home Energy Reports program relies upon a fixed-effects regression model. This statistical methodology is standard procedure for the analysis of controlled experiments, is a well-accepted practice within the energy efficiency program measurement and verification community, and closely resembles the "Large Scale Data Analysis" techniques described in the Model Energy Efficiency Program Impact Evaluation Guide from the National Action Plan on Energy Efficiency.

As of August 2015, the control group associated with the 2011 pilot wave was eliminated. Opower began reporting all savings for the program under the Modeled Savings Protocol.

In 2016, updates were made to the Modeled Savings Methodology to improve the accuracy of the reporting. These changes include:

- Establishing the relationship between the monthly savings rate and the cumulative number of print reports received per person in the wave up to that month.
- Applying the forecasted savings rate in each month to the usage of the modeled wave.
- Adapting the algorithm to apply to rolling enrollment waves.

Otter Tail received approval from the MN DER on October 7, 2016, to apply a revised Modeled Savings Methodology to calculate energy savings.

Overall adjusted energy savings associated with the HER program in 2017 totaled 11,089 MWh, equal to an average 404.06 kWh per participant household.

Energy Savings & Adjustments

In accordance with the Decision of the DER, these full savings are used in calculating the net benefits and cost effectiveness of the Energy Feedback program. For 2017, the energy savings associated with behavioral change has been reduced by two-thirds, based on the Decision[1] by the Deputy Commissioner of the DER.

[1] April 26, 2012, Docket Nos. E,G999/CI-08-133, E017/CIP-10-356.

ENERGY AND DEMAND RESULTS – 2017	
Aclara Home Energy Analyzer	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	1,584,736
Demand Savings – kW	323.583

ENERGY AND DEMAND RESULTS – 2017	
Opower Home Energy Reports	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	11,936,084
Demand Savings – kW	2,629.028

ENERGY AND DEMAND RESULTS – 2017	
Energy Feedback Combined Results	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	13,520,821
Demand Savings – kW	4,193.31

HEAT PUMPS

(Residential)

The Heat Pumps program targets residential customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency air source heat pumps or geothermal heat pumps. Otter Tail will again rely on Energy Star qualifications as the minimum equipment efficiency requirement for both types of heat pumps.

Air Source Heat Pumps			
Energy Star	HSPF	SEER	EER
Split System	> or = 8.5	> or = 15.0	12.5
Package Terminal			> or = 12.0

Geothermal Heat Pumps		
	COP	
Type	**Open**	**Closed**
Water to air	4.1	3.6
Water to water	3.5	3.1
Direct exchange	3.6	

Otter Tail promotes energy efficient heat pumps using the following resources:

- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- A media campaign through television, radio, and digital media during March in conjunction with the Advertising and Education Program
- Presentations and literature distribution Electrical contractor workshops.
- Bill messages included on customer statements.
- Bill inserts during April, June, and August about heat pump efficiency and rebates.
- A bill board image during May and June.
- Return envelope promotions periodically throughout the year.
- Training material covered with customer service and service representatives in annual and monthly training.
- Program, rate, technology, and rebate pages described within the Company's web site.

This program is included for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Heat Pumps (R)	**Actual**	**Proposed**	**% of Goal**
Participation	150	102	147%
Budget $	$277,377	$275,000	101%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Heat Pumps (R)	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	2,398,200
Demand Savings – kW	185.08

HOME INSULATION

The Home Insulation program targets residential customers with primary electric heat by offering rebates for contractor-installed weatherization and insulation measures.

Otter Tail promoted the Insulation program through:

- Bill inserts sent to all residential customers in the months of April, June, and August.
- A radio and digital media campaign during January.
- Program information included as a home page hero spot and elsewhere on the Company's web site.
- Rebate materials and program information was shared in addition to literature distribution at the Electrical contractor workshops.
- Training material presented to customer service and service representatives.
- Inclusion as appropriate on Home Energy Reports mailed to customers through the Energy Feedback program.

We will continue to offer incentives and seek additional marketing channels to drive increased participation. This program is included for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Home Insulation	**Actual**	**Proposed**	**% of Goal**
Participation	20	40	50%
Budget $	$25,016	$45,000	56%

Evaluation Methodology

Otter Tail collected information on the measures completed by the customers, including weatherization, attic and sealing insulation, and/or wall insulation, square footage of area being insulated and the pre- and post-insulation values.

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Home Insulation	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	108,647
Demand Savings – kW	3.44

HOME TRANSFORMER

The Home Transformer program aims to identify and assist customers in reducing energy loss and waste in their home and to save energy and money through efficiency improvements.

Through the program, electric heating customers were offered an energy audit and installations of select energy-efficiency products at no cost to the customer. Products included:

- An energy audit, a blower door test, and thermal imaging analysis.
- A detailed report on audit findings, including recommendations for energy saving measures (recommendations included estimated costs, annual savings, and simple payback).
- Efficiency products, installation demonstration, and education.
    - Electric measures – LED bulbs and engine block heater timer.
    - Heating and cooling measures – exterior door sweep, outlet gaskets, caulking, weather-stripping for windows.
    - Hot water measures – pipe insulation, low-flow showerheads and faucet aerators, temperature assessment and setback of water heater.

A community action agency was hired to deliver the home energy audits and complete the direct installs. Customers were approached to participate thru bill inserts that targeted approximately one-third of our customer service territory at a time.

Promotion materials were revised to increase customer participation. It has remained somewhat difficult to capture customer interest in this program, but numbers show an improvement in participation over 2016. This is likely attributed to offering the audits for free.

Otter Tail also partnered with Minnesota Energy Resources (MER) and Clean Energy Resource Teams (CERTs) in 2017 to complete in-home-energy-saving audits, valued at over $300 each, in the Bemidji area at a customer cost of $50. The customer received:

- A comprehensive analysis of their home's energy use, both gas and electric.
- Information on what energy-efficient improvements make the most sense for their home.
- A blower door test to determine leaks in the home.

- Safety tests: combustion safety, depressurization and carbon monoxide detection.
- If insulation is suggested, we can direct you to authorized insulation contractors who can help with your next steps and ensure that you are eligible for our generous insulation rebates.

Six audits were completed for Otter Tail customers. Measures received:

- Electric measures – LED bulbs and engine block heater timer.
- Hot water measures – low-flow showerheads and faucet aerators, temperature assessment and setback of water heater.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Home Transformer	**Actual**	**Proposed**	**% of Goal**
Participation	88	100	88%
Budget $	$53,942	$87,000	62%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Home Transformer	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	440,788
Demand Savings – kW	81.03

SCHOOL KITS

The School Kit program offered energy efficient items and educational materials to sixth grade students in all school districts throughout our service area. Students took home the kit to share with their parents. The families were asked to install the items contained in the kit. Otter Tail implemented the LivingWise program using Resource Action Programs (RAP), a contracted third-party and provided an energy savings kit to all students in 6th grade at the participating schools.

RAP delivers a turn-key project. Agency representatives contacted a list of approved schools throughout our service territory where students of our customers attend. RAP ordered the kits, assembled in reusable tote bags, and shipped the needed inventory to each school. Kits included: a car timer, six 9-Watt LED Energy Star bulbs, two faucet aerators, low-flow showerhead and a temperature gauge for the refrigerator. Along with the products, kits included information about the products and installation instructions. Each student received a workbook and a Student Guide. Teachers were given a Teacher Folder with a Teachers Book and lesson plans. The kits were delivered to sixth-grade students in the participating schools.

No promotion outside of the school was done for this program.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
School Kits	**Actual**	**Proposed**	**% of Goal**
Participation	1,511	1,000	151%
Budget $	$105,290	$130,000	81%

Evaluation Methodology

Energy and demand savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
School Kits	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	1,754,165
Demand Savings – kW	144.66

SMART THERMOSTATS

The Smart Thermostat program offers rebates to customers who buy and install a qualified Tier II or Tier III thermostat. Tier II thermostats are communicating thermostats that give users access to set points and schedule from anywhere using a smart device including a mobile phone, tablet, or computer. Tier III are analytics capable thermostats that offer additional energy savings features, including coaching, HVAC diagnostics, comparative information, and geofencing. The

tier level and the type of heating system determined the level of rebate a customer received. A customer without primary electric heating received a lesser rebate.

Otter Tail promoted the Smart Thermostats program through:

- Bill inserts sent to all residential customers in the months of April, June, and August.
- Billboard display in March and April.
- Company website pages and home page hero spots.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Smart Thermostats	**Actual**	**Proposed**	**% of Goal**
Participation	50	140	36%
Budget $	$28,268	$50,000	57%

Evaluation Methodology

The Company uses figures from the Technical Reference Manual (TRM) for calculating savings for installing a Tier II or Tier III smart thermostat. We completed inspections on 10 percent of the rebates given and found all thermostats installed and capable of wireless control. This program has been approved for 2018. Otter Tail plans to offer a prorated rebate based on reduced savings for those customers installing a smart thermostat with electric cooling only.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Smart Thermostats	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	141,951
Demand Savings – kW	2.25

WATER HEATING STORE & SAVE
(Residential)

Controlled water heating storage is one of Otter Tail's largest residential direct load management programs. The program gives participating customers a discounted rate or a bill credit in exchange for the customer allowing the Company to reduce their water heating energy use during peak and high energy price periods. During a control event, water heaters are interrupted entirely for the duration of the control period, which can occur at any time of the year.

Water heaters were controlled approximately 185 hours in 2017 over 198 days. During 2017 Otter Tail initiate a test of more frequent, shorter duration control based on pricing signals to maximize savings to customers from water heater control. The results of this control scenario is still under review.

Otter Tail promotes controlled service water heating using the following resources:

- Radio and digital media campaign.
- Bill messages included on customer statements.
- Bill inserts.
- Local digital billboard.
- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Print advertisement in a regional home magazine.
- Training material covered with service representatives in annual and monthly training.
- Program, rate, and rebate pages described within the Company's web site.

Effort was made to inform customers about technology changes for large capacity water heaters and to introduce customers and contractors to grid enabled water heater options.

Participation & Budget

Otter Tail initially filed the Water Heating Store & Save program with 100 percent residential participation. In 2017, the program has a ratio of 94 percent residential and 6 percent commercial. Otter Tail has included participation data for both classes in this section of the Status Report.

PARTICIPATION AND BUDGET – 2017			
Water Heating Control	**Actual**	**Proposed**	**% of Goal**
Participation	16,056	16,165	99%
Budget $	$23,267	$35,000	66%

Evaluation Methodology

Energy savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Water Heating Control (R&C)	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	581,908
Demand Savings – kW	11,752.22

DIRECT IMPACT – LOW INCOME

HOUSE THERAPY

The House Therapy program's primary focus is audit and weatherization services for low-income residential customers. The following table provides details on measures installed and whether the participants were owners or renters.

House Therapy -- Owner / Renter Detail 2017			
Installed measures	**Owners**	**Renters**	**Total**
Audit	111	11	122
Attic Insulation Materials	6	1	7
Compact Fluorescent Lamp	24	0	24
Engine Heater Timer	134	0	134
Faucet Aerator	165	21	186
Freezer	16	0	16
LED	1,259	40	1,299
Low-flow Showerhead	90	0	90
Pipe Insulation	56	0	56
Refrigeration	51	9	60
Water Heater	18	0	18
Water Heater - Reduce Temperature	53	11	64
Water Heater--Controlled Ser. Rate	8	0	8
Weatherization	5	0	5

House Therapy -- Owner / Renter Detail - 2017				
	CAP Spending	**Percent**	**Participation**	**Percent**
Owners	$109,467	85%	111	91%
Renters	$19,011	15%	11	9%
Total	$128,478	100%	122	100%

The Company meets yearly with the local Community Action Program (CAP) Agencies to implement House Therapy as cost-effectively as possible and commends the agencies that are committed to the program.

Otter Tail promotes House Therapy using various resources:

- Residential bill insert.
- Part of the environment disclosure insert posted on our website annually.
- Part of the Company's website listing the program and each of the agencies that implement the program.

This program has been approved for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
House Therapy	**Actual**	**Proposed**	**% of Goal**
Participation	122	130	94%
Budget $	$161,155	$150,000	107%

Evaluation Methodology

In 2017, the TRM was used for many of the House Therapy components. Where TRM was not available, engineering estimates were used. Energy and demand savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
House Therapy	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	255,368
Demand Savings – kW	26.58

DIRECT IMPACT – COMMERCIAL

ADJUSTABLE SPEED DRIVES

Induction motors are the workhorses of industry, used widely, and often exclusively, in virtually every manufacturing plant and office building. However, the single most potent source of energy savings in induction motor systems lies not in the motor but rather in the controls that govern the motor's operation. Adjustable speed drives are one method of modifying or controlling motor operation that is a proven option for improving performance and efficiency in drive systems.

Otter Tail promotes adjustable speed drives using various resources.

- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Promotions and technical discussions at Electrical workshops for contractors.
- Directly to potential program participants in the educational sector at the annual Minnesota School Board Association conference.
- Bill inserts promoting drive power system efficiency to commercial and industrial customers.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Adjustable Speed Drives	**Actual**	**Proposed**	**% of Goal**
Participation	122	135	90%
Budget $	$276,952	$379,000	73%

Evaluation Methodology

The Company utilizes engineering calculations that are based on methodologies developed by the Electric Power Research Institute for fan- and pump-based adjustable speed drive systems. Hours of operation and associated loading factors are provided by the customer as inputs for the energy and demand savings calculations. Energy and demand savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Adjustable Speed Drives	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	4,655,659
Demand Savings – kW	553.40

Numerous adjustable speed drive projects completed by customers in the industrial sector contributed to the program exceeding energy and demand savings goals.

AIR CONDITIONING CONTROL

The CoolSavings air conditioning control program targets small commercial customers in Minnesota with central air conditioning systems. Customers are encouraged to enroll in the program and receive a bill credit of $5 per ton of connected load for each summer month (June-September). Otter Tail's latest general rate case approved a $6 per ton incentive beginning in 2018.

Otter Tail promotes the program through the following resources:

- Personal business contacts.
- Bill insert targeting commercial customers during February and March.
- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Program, technology, and rebate information available on the Company's web site.
- Otter Tail's Advertising and Education program targeting small- to mid-size businesses.

In 2017, Otter Tail controlled air conditioning 13 days, totaling 18 hours and 51 minutes. This control time is within the 300-hour control limit in the air conditioning rider.

PARTICIPATION AND BUDGET – 2017			
Air Conditioning Control (C)	**Actual**	**Proposed**	**% of Goal**
Participation	271	152	80%
Budget $	$13,743	$30,000	46%

Evaluation Methodology

Load data recorders are being installed at each of the locations enrolled. Otter Tail is collecting the data from these recorders for EM&V purposes. Current energy and demand savings for this

program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Air Conditioning Control (C)	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	28,617
Demand Savings – kW	1,486.20

COMMERCIAL DESIGN ASSISTANCE

The Commercial Design Assistance program offers building owners, architects, engineering firms, and developers the opportunity to participate in an integrated design process and identify and implement cost effective, energy-efficient design strategies in commercial new construction and major renovation projects.

The Commercial Design Assistance program is implemented with the assistance of a consultant in the architectural industry that specializes in early design review, energy efficient building simulation, LEED certification, evaluation of Sustainable Buildings 2030 (SB2030) energy goals, and facilitation of interactive meetings to select energy efficient design strategies. Tools available through the State of Minnesota are used to develop SB2030 performance standards for all applicable projects.

Otter Tail promotes Commercial Design Assistance using various resources:

- *Taking Care of Business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- The *Make It Electric* newsletter targeting commercial and industrial customers (when feasible).
- Specialized program literature available upon request.
- Presentations and literature distribution at the Electrical workshops for contractors.
- Directly with potential program participants in the educational sector at the annual Minnesota School Board Association conference.
- Program, technology, and rebate information available on the Company's web site.
- Through the program consultant's network, membership, and participation as professionals in architectural and engineering organizations, including ASHRAE, AIA, and IES.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Commercial Design Assistance	**Actual**	**Proposed**	**% of Goal**
Participation	4	6	67%
Budget $	$179,873	$345,160	52%

Evaluation Methodology

Otter Tail's program implementation consultant has taken all necessary steps to assure that baseline energy efficiency levels moving forward reflect 2015 energy code modifications.
In 2017, Otter Tail filed a program modification to classify the Commercial Design Assistance program as a non-direct impact program, to claim savings under the prescriptive programs, and to rename the program Integrated Building Design Plus

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Commercial Design Assistance	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	838,600
Demand Savings – kW	211.47

COMMERCIAL DIRECT INSTALL

The Commercial Direct Install (CDI) program offers free energy assessments and direct installation of low-cost energy efficiency measures for participating small to mid-sized commercial customers. The program capitalizes on personal interactions to educate customers in this often-overlooked market segment on:

- Benefits of energy efficiency.
- Energy efficiency opportunities in the customer's business operations.
- Quick, easy and affordable measures that have a direct, immediate impact on reducing energy bills.

The free energy assessment provides the customer with a simple two-page report identifying opportunities for investing in energy efficiency measures and further educate customers on the subject. At the same time, direct-installation of easily-installed energy efficiency measures at no

cost to the participant provides real-world examples of technologies readily available for reducing energy expenses in small- to mid-size businesses.

Otter Tail promotes the Commercial Direct Install program through a targeted strategy based on community size and geographic location. The Company relies on personal contacts with city administration and government, Chamber of Commerce personnel, and any other business organizations to determine overall interest in implementing the program. The Company has also leveraged valuable assistance from CERTs in conducting outreach with potential participants. Promotion of the Direct Install program include the steps below:

1) Otter Tail coordinates a mutually convenient time between internal staff, CERTs staff, and the Company's third-party implementation partner to conduct door-to-door outreach efforts at the community business district level.
2) Otter Tail notifies community government and city leaders of the scheduled outreach and direct install dates, verifying that local law enforcement is aware of both door-to-door promotion efforts and implementation of the direct install measures.
3) CERTs staff spends one to two days visiting potential participants, providing information about the program, and scheduling dates for the program implementation while determining customer interest.
4) Otter Tail, CERTs, and Otter Tail's program implementation partner discuss results from any outreach efforts and businesses requesting participation in the Direct Install program.
5) Otter Tail's implementation partner completes assessments for participating businesses and installation of all pertinent measures complimentary to program participants.
6) Following completion of all direct installation measures, Otter Tail staff follows up with participating businesses on opportunities for efficiency identified during the assessment completed by the Company's implementation partner.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Commercial Direct Install	**Actual**	**Proposed**	**% of Goal**
Participation	76	110	69%
Budget $	$31,276	$28,740	109%

Evaluation Methodology

The Company uses TRM savings algorithms and assumptions and customer-specific operational data where applicable.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Commercial Direct Install	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	249,002
Demand Savings – kW	32.95

COMPRESSED AIR EFFICIENCY

The Compressed Air Efficiency program provides incentives to commercial and industrial customers for implementing efficiency improvements in compressed air systems and for adhering to Otter Tail's proposed guidelines in completing studies focusing on compressed air system efficiency.

Compressed air systems afford users relatively easy distribution of and access to a robust power source present in nearly all industrial facilities, is often referred to as the fourth utility in industrial plants. At the same time, compressed air generation is one of the most energy-intensive utilities in many industrial facilities. Efficiency of a compressed air system is typically only ten to fifteen percent. Consequently, any improvements to the efficiency of compressed air systems can lead to significant impacts in overall facility energy consumption. Because of their ubiquitous use throughout the industry, ease of access, energy intensity, and inherently low efficiency, any improvements to these systems can yield significant electricity savings, sometimes as high as 20 to 50 percent.

Otter Tail promoted Compressed Air Efficiency using various resources:

- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Promotions and technical discussions at Electrical workshops for contractors.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.
- Outreach with industrial compressed air users at the Company's Compressed Air Challenge Fundamentals training.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Compressed Air Efficiency	**Actual**	**Proposed**	**% of Goal**
Participation	10	23	43%
Budget $	$61,568	$139,900	44%

Evaluation Methodology

Otter Tail uses the TRM, when available, and the Wisconsin and Vermont TRMs in its absence. All savings algorithms include actual data from historical Otter Tail compressed air assessment performed by independent third-party engineers or vendors.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Compressed Air Efficiency	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	200,657
Demand Savings – kW	38.47

HEAT PUMPS
(Commercial)

The Air Source Heat Pump program targets commercial customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency air source heat pumps. The program is included in the 2018 CIP and will use the Energy Star qualifications as the minimum equipment efficiency requirement.

Air Source Heat Pumps			
Energy Star	**HSPF**	**SEER**	**EER**
Split System	> or = 8.5	> or = 15.0	12.5
Package Terminal			> or = 12.0

The Geothermal Heat Pump program capitalizes on a renewable technology and targets commercial customers currently using or considering the installation of less efficient resistance electric heating and cooling systems by offering rebates for high-efficiency geothermal heat pumps.

Geothermal Heat Pumps		
Type	**COP**	
	Open	Closed
Water to air	4.1	3.6
Water to water	3.5	3.1
Direct exchange	3.6	

Otter Tail promotes energy efficient heat pumps using various resources:

- *Taking Care of Business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Brochures available upon request.
- Presentations and literature distribution at the Electrical workshops for contractors.
- Directly to potential program participants at the annual Minnesota School Board Association conference.
- Bill messages included on all customer statements.
- Bill inserts about heat pump efficiency, financing, and rebates.
- Training material covered with service representatives in annual and monthly training.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.
- Otter Tail's Advertising and Education program targeting small- to mid-size businesses.

To increase participation, the Company offered rebates and financing at 1.9 percent in 2017 for commercial customers and will continue in 2018.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Heat Pumps (C)	**Actual**	**Proposed**	**% of Goal**
Participation	294	84	350%
Budget $	$614,339	$205,000	300%

Evaluation Methodology

An engineering analysis was used to determine energy savings for each air source and geothermal heat pump systems installed. The engineering analysis is consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2016	
Heat Pumps (C)	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	4,631,320
Demand Savings – kW	497.58

GRANTS (CUSTOM PROJECTS)

The Grants program offers customized incentives to commercial and industrial customers for conservation and efficiency improvements.

In 2017, Otter Tail analyzed a variety of customer-submitted grant projects with 44 of these projects approved for incentives.

Custom Projects	Quantity
Appliances	1
Automation	3
Building Envelope Improvements	5
Chiller System	3
Compressed Air System	3
Cooling System	4
Heating System	14
Production Equipment	3
Refrigeration System	4
Ventilation System	3
Welding	1
Total	**44**

Otter Tail promotes the Grant program through a variety of resources:

- *Taking Care of Business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Bill inserts during April.
- Presentations and literature distribution at the Company's annual Electrical workshops for contractors.
- Directly with potential program participants in the educational sector at the annual Minnesota School Board Association conference.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.

- *Make It Electric* newsletter for commercial and industrial customers.
- Outreach with industrial compressed air users at the Company's Compressed Air Challenge Fundamentals training.

The Grant program is included in Otter Tail's 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Custom Efficiency Grants	**Actual**	**Proposed**	**% of Goal**
Participation	44	30	147%
Budget $	$264,124	$296,500	89%

Evaluation Methodology

Estimated savings from custom grant measures initially come directly from customers submitting detailed information documenting demand and energy savings for each proposed measure. The Company verifies the feasibility of the proposed savings, and if necessary, makes modifications to the customer's submitted figures. Otter Tail offers assistance as needed for our commercial and industrial customers to help determine the energy and demand savings needed to develop a grant proposal.

End-use metering is also an option for verifying impact savings. In addition, the customer often works with internal or third-party engineers to determine and verify savings.

The Large Custom Grant Measurement and Verification (M&V) protocols affect any large project with estimated savings exceeding one million kilowatts hours. The protocols include several options for measurement and verification of large grant projects that meet the protocol criteria. Otter Tail had no 2017 projects that qualified for formal M&V.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Grants	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	2,213,216
Demand Savings – kW	1,298.09

COMMERCIAL & INDUSTRIAL FOCUSED EFFICIENCY

Otter Tail's largest industrial customers collectively account for less than two percent of all Minnesota customers but account for more than 60 percent of total retail energy sales. As significant consumers of electricity, the industrial sector often provides abundant opportunities for improvements in energy management practices and implementation of energy efficiency upgrades.

The Commercial and Industrial Focused Efficiency program targets Otter Tail's largest energy-using customers with potential for improvements in production processes, end-use efficiency, and energy management practices. The program uses a proactive approach to benchmarking energy management practices and identifies specific opportunities for efficiency improvements in large commercial and industrial facilities.

Implementation of the Industrial Focused Efficiency program consists of the following strategies:

1. **Proactive project identification.** Otter Tail considers both customer engagement and energy savings potential in screening potential participants. The program focuses on customers with annual savings potential of 250,000 kWh or greater, typically requiring annual consumption of 5,000,000 kWh or more. Potential participants bringing engaged and enthusiastic management and employee teams to the table are more likely to pursue the most cost-effective energy saving behaviors and opportunities.

2. **Energy management benchmarking.** For qualifying customers, Otter Tail funds the Envinta One2Five energy management benchmarking analysis. The benchmarking session focuses on management practices related to energy efficiency by incorporating participation from across the customer's organization.

3. **Project identification.** Forming an engaged and knowledgeable energy management team is imperative to identifying efficiency opportunities on the customer site. To further facilitate identification of efficiency measures, Otter Tail funds 50 percent of engineering studies needed to identify and evaluate energy savings opportunities. Possible efficiency measures include lighting, drive-power systems, process efficiency improvements, refrigeration systems, compressed air systems and custom efficiency projects.

4. **Project implementation.** Working in tandem with the customer's representation on the energy management team, Otter Tail develops a schedule of efficiency projects with bonus incentives provided in exchange for the participant's completion of all measures before established deadlines. Efficiency measures might include projects traditionally accounted for under Otter Tail's prescriptive rebate programs, but Otter Tail attributes

energy savings for each efficiency measure to the Commercial and Industrial Focused Efficiency program.

5. **Measurement and verification.** Otter Tail follows the Measurement and Verification Protocols for end-use efficiency projects meeting the formal measurement and verification requirements established by the DER.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Industrial Focused Efficiency	**Actual**	**Proposed**	**% of Goal**
Participation	2	1	200%
Budget $	$210,877	$220,000	96%

Two industrial customers – both operating in the manufacturing sector – participated in the Commercial and Industrial Focused Efficiency program in 2017 by previously completing a combination of required actions:

1. Formation of a facility energy management team with representation from Otter Tail and leadership from an independent, third party energy management consultant.
2. Completed Envinta One2Five energy management benchmark with participation from customer's executive management group and energy management team.
3. Completed an onsite engineering study identifying end-use energy efficiency opportunities.
4. Analyzed and evaluated cost effectiveness and any possible production impacts of energy efficiency measures identified in the engineering study.
5. Together with Otter Tail, identified bonus incentive levels needed to prioritize capital-intensive energy efficiency projects for completion by established deadlines.

One participating customer concluded 2016 program activities extending into 2017 by implementing lighting and compressed air efficiency measures. The second customer completed a lighting efficiency project after evaluating the performance of wash-down compliant LED high-bay light fixtures operating in a stressful environment with high ambient temperatures while participating in the program prior to 2017.

Evaluation Methodology

Otter Tail developed energy savings estimates through both established methodologies for prescriptive measures and through engineering calculations for custom measures implemented by the customer.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Industrial Focused Efficiency	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	1,761,209
Demand Savings – kW	292.46

LIGHTING RETROFIT

The Lighting Retrofit program provides cash incentives to commercial and industrial customers for purchasing and installing energy-efficient lighting technologies, including LED lamps and fixtures and lighting controls.

Otter Tail actively promotes the Lighting program through a variety of strategies:

- *Taking Care of Business* commercial and industrial CIP brochure.
- Bill inserts targeting commercial and industrial customers.
- Presentations and literature distribution at Electrical workshops for contractors.
- Personal interactions between customers and Company program implementation staff.
- Directly with customers in the educational sector at the annual Minnesota School Board Association conference.
- *Programs and services guide* provided to contractors and employees.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.
- *Make It Electric* newsletter for commercial and industrial customers.
- Otter Tail's Advertising and Education program targeting small- to mid-size businesses.

The Lighting Retrofit program will continue in Otter Tail's 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Lighting Retrofit	**Actual**	**Proposed**	**% of Goal**
Participation	797	495	161%
Budget $	$1,894,087	$950,000	199%

Evaluation Methodology

Otter Tail uses the TRM to calculate impact savings for the Lighting Retrofit program. The Company documents all existing lighting wattage removed at each site and compares it to the actual energy efficient lighting wattage being installed to calculate energy savings. The TRM establishes hours of operation. In accordance with the TRM protocols, energy and demand savings adjustments of 9.5 and 25.4 percent respectively were allocated to those businesses having electric mechanical cooling. This is consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Lighting Retrofit	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	16,858,464
Demand Savings – kW	2,609.30

LIGHTING – NEW CONSTRUCTION

Opportunities exist for customers to implement lighting technologies that are more efficient than widely-accepted, standard efficiency lighting systems during the new construction process. Examples of these technologies and systems include:

- High Intensity fluorescent
- High Performance T8 lamps & ballasts/reduced wattage T8 lamps
- High efficiency ceramic metal halide
- LED fixtures and lamps
- Occupancy, daylighting, and networked-based lighting controls

Otter Tail promotes the Lighting--New Construction program using various promotional resources:

- *Taking Care of Business* commercial CIP brochure.
- Bill inserts targeting commercial and industrial customers.
- *Programs and services guide* provided to contractors and employees.
- Promotions and technical discussions at Electrical workshops for contractors.
- Directly with customers in the educational sector at the annual Minnesota School Board Association conference.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy

Advisor tool.
- Personal consultations between program implementation staff and customers.
- Otter Tail's Advertising and Education program targeting small- to mid-size businesses.

This program will continue in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Lighting – New Construction	**Actual**	**Proposed**	**% of Goal**
Participation	264	193	137%
Budget $	$131,459	$166,000	79%

Evaluation Methodology

Otter Tail uses the TRM to calculate impact savings for the program. For newly-installed lighting systems, qualifying installed measures are compared to baseline efficiency systems to determine kilowatt-hour savings. Hours of operation are determined by the TRM according to customer type. In accordance with the TRM protocols, energy and demand savings adjustments of 9.5 and 25.4 percent respectively were allocated to those businesses having electric mechanical cooling.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Lighting – New Construction	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	2,956,464
Demand Savings – kW	402.40

MIDSTREAM COMMERCIAL KITCHEN EQUIPMENT

The Midstream Commercial Kitchen Equipment program offers incentives at the equipment dealer and distributor level to encourage customer purchases of commercial kitchen equipment that meet Energy Star efficiency levels. The program also offers a Sales Performance Incentive Fund (SPIF) for each qualifying measure sold by participating dealers and distributors.

With a midstream program model, Otter Tail focused on recruiting dealers to encourage consumers of commercial kitchen equipment to select qualifying energy efficient commercial

kitchen products. Specific strategies in dealer recruiting and training included:

- Identification of commercial equipment dealers located within and around Otter Tail's geographic service territory.
- Development and delivery of a presentation to educate potential dealers about the program, including participation benefits, program expectations, and timelines.
- Creation of binders to guide dealer sales personnel in the midstream program operations.
- Design and production of marketing materials for use in participating dealerships to educate end users on the benefits of energy efficient commercial kitchen equipment.
- Development and delivery of a presentation to train participating dealers on sales strategies and program operations.

Otter Tail saw no participation in the program in 2017 and attributes it to consumers focusing on minimizing first cost impacts. Equipment qualifying for the program is technically available, but capital budget constraints frequently push equipment buyers and establishment owners toward much less expensive used commercial kitchen equipment.

Expenses incurred in 2017 included:

- Program administration and management.
- Consultant expense for identification of potential commercial equipment dealers.
- Material development for recruiting and training participating commercial kitchen equipment dealers.
- Program reporting and tracking system development.
- Design and production of promotional materials for dealer show rooms.

The Company will seek to discontinue this program in 2018.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Midstream Commercial Kitchen Equipment	**Actual**	**Proposed**	**% of Goal**
Participation	0	100	0%
Budget $	$61,936	$88,200	70%

Evaluation Methodology

Otter Tail uses the TRM algorithms and assumptions when available and other states' TRMs when not available.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Midstream Commercial Kitchen Equipment	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	0
Demand Savings – kW	0.00

MOTORS

The goal of the Motors program is to reduce system peak demand and energy use by offering customers incentives to purchase and install motors that meet and/or exceed NEMA Premium® efficiency ratings in various applications. The Motors program covers motor sizes from one horsepower up to 500 horsepower in size and includes additional incentives for customers upgrading to high-efficiency motors with explosion-proof enclosures.

Otter Tail promotes the Motors program through a variety of resources:

- *Taking Care of Business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Through bill inserts targeting commercial and industrial customers.
- Presentations and literature distribution at the Company's annual Electrical workshops for contractors.
- Directly to customers in the educational sector at the annual Minnesota School Board Association conference.
- Otter Tail's Advertising and Education program targeting small- to mid-size businesses.
- In the *Make It Electric* newsletter for commercial and industrial customers.
- Personal consultations between program implementation staff and customers.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.

This program will continue in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Motors	**Actual**	**Proposed**	**% of Goal**
Participation	139	205	68%
Budget $	$105,500	$133,000	79%

Motor Types Rebated	
New / replace non-operating	15
Replace operating	124
Total Motors Rebated	139

Evaluation Methodology

Otter Tail used Minnesota's TRM data, when applicable, along with engineering estimates and MotorMaster software to determine energy savings for specialty motors currently not in the TRM. For 1 to 200 horsepower motors installed in new applications and for motors replaced at failure, Otter Tail used NEMA Premium efficiency levels as baseline efficiency for totally-enclosed fan-cooled and open drip-proof motors. NEMA efficiency rating, horsepower, motor speed, run-time hours, and quantity are taken from the customer's application form.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Motors	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	407,600
Demand Savings – kW	60.81

RECOMMISSIONING/RETROCOMMISSIONING (RCx)

The *Energy Star Building Manual* defines commissioning as the process of ensuring that systems are designed, installed, functionally tested, and capable of being operated and maintained to the owner's operational needs.

- Recommissioning is the term used for applying the process to a building that has been commissioned previously (either during construction or as an existing building).
- Retrocommissioning is the systematic process applied to existing buildings that have never been commissioned to ensure that their systems can be operated and maintained according to the owners' needs.

Building tune-ups, RCx Lite, and building optimization all refer to an evolution of the traditional RCx process. The approach starts by targeting the most common RCx measures with the highest chances of returning payback on operations and maintenance improvements. Often, these operation and maintenance improvements are associated with advanced control strategies. Engineering firms completing RCx Lite studies are often capable of identifying these measures through spot inspections and direct digital control systems without the added costs of seasonal monitoring and functional performance testing completed through formal RCx studies. Consequently, the RCx Lite process can identify up to 75 percent of the savings of a more formal RCx study at approximately 25 percent of the cost.

Otter Tail's RCx program provides incentives to qualifying commercial customers to complete RCx studies and implement cost effective, energy savings measures. The RCx program proposes a tiered approach to delivering RCx services. The RCx Lite tier provides incentives for building tune-ups, where the RCx tier incentivizes customers to implement formal RCx studies with more expansive measures. Potential participants must complete a pre-approval application form prior to initiating any RCx projects to be assured of eventual study funding from Otter Tail. Not all buildings and building types are ideal candidates for achieving energy savings through traditional RCx efficiency measures; the pre-approval process increases the likelihood that customers with buildings and building types with the best RCx opportunities capitalize on the RCx process.

Otter Tail promotes the RCx program through a variety of resources:

- *Taking Care of Business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Through bill inserts targeting commercial and industrial customers.
- Presentations and literature distribution at the Company's annual Electrical workshops for contractors.
- Through brochures and literature explaining the RCx process and program.
- Directly with customers in the educational sector at the annual Minnesota School Board Association conference.
- Personal consultations between program implementation staff and customers.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Analyzer tool.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
RCx	**Actual**	**Proposed**	**% of Goal**
Participation	5	4	125%
Budget $	$159,012	$188,000	85%

Otter Tail's traditional RCx program model relies on industry engineering firms to provide RCx services to potential participants in the program.

Evaluation Methodology

Traditional RCx

Otter Tail, together with a third-party engineering consulting firm, reviews the RCx study for accuracy of calculations, assumptions, and completion of all required RCx study requirements. The third-party engineering firm does not provide direct RCx services for customers or compete with engineering firms providing these services. Otter Tail works with the customer and the customer's engineering firm as needed to assure engineering calculations, assumptions, and the study all meet the Company's RCx program requirements.

Turn-key RCx

Otter Tail Power uses savings calculations developed by the Company's program implementation consultant using engineering fundamentals, site data, and energy modeling. To evaluate those savings, Otter Tail Power and its third-party program implementation consultant perform post-installation functional testing at each facility. This on-site M&V confirms the completeness of each measure's implementation in accordance with the engineering recommendations. The savings calculations are revised based on observed conditions post-implementation and reflect any alternation to the measure that results from customer implementation.

Energy Savings

ENERGY AND DEMAND RESULTS – 2017	
RCx	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	755,232
Demand Savings – kW	4.10

REFRIGERATION

The Refrigeration program is designed to promote high-efficiency refrigeration technologies, including measures to upgrade compressor, condenser, and display case efficiency. The U.S. Energy Information Administration Commercial Buildings Energy Consumption Survey (CBECS) released in May 2016 confirms the energy intensive application of measures targeted through Otter Tail's Refrigeration program in the education, food sales, food service, and health care sectors:

Sector	All buildings reported (U.S.)	Buildings with any refrigeration equipment	Walk-in units
Education	389,000	277,000	80,000
Food sales	177,000	175,000	145,000
Food service	380,000	380,000	293,000
Health care	157,000	142,000	9,000

Otter Tail's Refrigeration program incentivizes the installation of efficiency measures in both retrofit and new-construction applications in commercial sectors with intensive demand for commercial refrigeration.

Otter Tail promotes the Refrigeration program using various promotional resources:

- *Taking care of business* commercial CIP brochure.
- *Programs and services guide* provided to contractors and employees.
- Specialized contractor information kits provided for refrigeration contractors.
- Follow-up with personal contractor contacts.
- Personal contacts targeting grocery and convenience stores and other facilities with energy-intensive refrigeration loads.
- Program, technology, and rebate information available on the Company's web site at www.otpco.com, including the industry- and technology-specific Business Energy Advisor tool.

This program is included for continuation in Otter Tail's 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Refrigeration	**Actual**	**Proposed**	**% of Goal**
Participation	127	86	148%
Budget $	$168,155	$130,085	129%

Evaluation Methodology

The Company uses the TRM and engineering estimates for each refrigeration measure. Energy and demand savings for this program are consistent with Attachment B: Electric Product Assumptions, approved in the Company's triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Refrigeration	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	1,351,887
Demand Savings – kW	194.74

ROOF TOP UNIT EFFICIENCY

Roof top HVAC units provide heating and cooling for nearly half of the commercial floor space in America, yet there are limited program opportunities available to assist customers in maximizing the efficiency of this equipment. This is especially prevalent among small- to medium-sized commercial buildings, which tend to be an underserved market segment due to the dynamic differences in their business models. The Roof Top Unit (RTU) Efficiency program tests the impacts of providing incentives to customers to improve the energy efficiency of existing RTUs through on-going operation and maintenance activities and through advanced RTU controller (ARC) upgrades.

Otter Tail promoted the RTU Efficiency program by identifying a past participant from the Company's Commercial and Industrial Focused Efficiency Program operating with significant, year-round RTU cooling load. Through a series of meetings and discussions between the Company, the customer, the customer's refrigeration contractor, and the Company's program implementation consultant, all stakeholders agreed that this customer would be a strong candidate as a participant in the RTU Efficiency program.

Specific pilot activities included identifying and/or training contractors capable of installing advanced rooftop unit controllers. One of the leading advanced RTU controller manufacturers requires participating contractors to complete a week-long certification course at their corporate facility, which remains a barrier to contractor participation. Otter Tail also explored other advanced RTU controller solution providers to determine qualifications for the program.

The Company will seek to discontinue this program in 2018.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Roof Top Unit Efficiency	**Actual**	**Proposed**	**% of Goal**
Participation	0	20	0%
Budget $	$36,422	$51,885	70%

Evaluation Methodology

Otter Tail uses savings calculations based on Michaels Energy's research and U.S. Department of Energy estimates.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Roof Top Unit Efficiency	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	0
Demand Savings – kW	0.00

DIRECT IMPACT – OTHER

COMPANY-OWNED STREET & AREA LIGHTING

Otter Tail provides illumination services to 161 Minnesota communities and other customers through company ownership, operation, and maintenance of approximately 19,677 street and area lighting fixtures. In exchange for a monthly fee, customers receive hassle-free illumination service, including equipment installation, asset rental, electricity, and maintenance in a convenient, monthly charge on the customer's electric service bill. Otter Tail installs street and area lighting fixtures at the request of our customers and, consequently, classifies electricity consumption for company-owned street and area lighting fixtures as customer electricity usage.

The objective of the Company-owned Street and Area Lighting program is to retrofit all Company-owned street and area light fixtures used in providing illumination services for retail customers from HID to LED technology.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Company-Owned Street & Area Lighting	**Actual**	**Proposed**	**% of Goal**
Participation	0	3,941	0%
Budget $	$0	$1,303,849	0%

Otter Tail received approval from the Minnesota Public Utilities Commission for program strategies requiring regulatory approval in December 2017. These strategies included closure of previous Dusk to Dawn street and area lighting tariffs featuring HID lighting technology, approval of new tariffs featuring LED technology, and recovery of applicable expenses through the Company's CIP Tracker. With approval in place in late 2017, the Company is now well-positioned to begin implementing the program in select communities in early spring and into the summer of 2018.

Evaluation Methodology

The Company compares the fixtures being installed to the fixtures being removed to determine energy and demand savings. The savings calculation utilizes the TRM values for hours of operation. Specifics are included in Attachment B: Electric Product Assumptions.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Publicly Owned Property Solar	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	0
Demand Savings – kW	0.00

PUBLICLY OWNED PROPERTY (POP) SOLAR

On August 8, 2016, the Deputy Commissioner approved Otter Tail's request to add POP Solar to its portfolio of program offerings. The objective of the POP Solar program is to demonstrate the benefits of solar PV generation to rural Minnesota communities, educational facilities, and local and tribal governments by offering incentives for universal solar projects. The project provides incentives for installation of non-residential solar PV systems in public sector facilities. The POP Solar program is an example of universal solar, which shares the benefits of solar with all members of the community, university, public school, tribal properties, or other public owned properties.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Publicly Owned Property Solar	**Actual**	**Proposed**	**% of Goal**
Participation	0	9	0%
Budget $	$9,961	$114,860	9%

Otter Tail's Energy Management Representatives promoted the POP program to public entities across Otter Tail's service territory. Several customers showed strong interest in 2017; however, no customers were able to complete any projects. Customer concerns included upfront costs competing with other capital projects, age of current roof surface, and adequate land availability. Otter Tail is hopeful some of these projects and new ones come to fruition in 2018.

Evaluation Methodology

Otter Tail will install production metering with data recorders and the required communications infrastructure needed to store customer-owned, solar PV production in the Company's web-based Power Profiler application. Otter Tail will use this production data to accumulate solar renewable energy credits to comply with Minnesota's Solar Energy Standard.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
Publicly Owned Property Solar	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	0
Demand Savings – kW	0.00

INDIRECT IMPACT PROGRAMS / REGULATORY REQUIREMENTS

ADVERTISING & EDUCATION – Residential & Commercial

Advertising & Education – Residential

The Advertising & Education program for 2017 targeted Minnesota customers and students with reinforcing messages to make conserving energy a lifestyle. Three approaches were used:

- *Advertising* that increases awareness, educates about technologies and personal energy usage, and motivates individuals to act to conserve energy.
- *Internet-based resources* including YouTube.com videos, web advertisements, and web-based content on company websites.
- *Classroom based presentations* targeting fourth through sixth graders with educational

messages about energy production, energy use, and conservation education across all economic groups.

Advertising

Two campaigns that included runs on television, radio, and streaming media channels ran with energy efficiency messages that focused on reaching residential customers during 2017. These included:

- *Be the Lead:* A media campaign that included television, radio, streaming media, and a web landing page was completed to educate customers about promoting energy conservation to the next generation by being a role model when making energy use decisions.
- A media campaign that included television, radio, streaming media, and a web landing page was completed to educate customers on the efficiency of heat pump operations.
- .

Additional advertising support included preparation of consistent energy efficiency messaging about residential CIP programs including energy feedback tools available online, LED lighting, home insulation program, appliance recycling, smart thermostats, and AC cycling.

Internet-based resources

This program supports development of promotional and educational materials for the Company website and social media channels. These materials encourage participation in direct impact energy efficiency programs in the CIP portfolio. Data are collected from web analytic tools used on the company websites. Minnesota customer web participation is calculated as 45 percent of the unique visitor count to the website material. This represents the portion of Company customers located in Minnesota.

Home page and program support pages are placed on www.otpco.com to promote CIP programs including Home Energy Analyzer, insulation rebates, heat pumps, off-peak water heating, commercial program rebates, air-conditioning cycling program, appliance recycling program, and Energy Star lighting.. Traffic generated was tracked as participation resulting from these ads.

An educational YouTube video series continued to be presented to customers focused on home insulation and maintenance topics:

- Weatherization
- Furnace filter change out
- Sealing attic access doors
- Sealing attic bypass leaks
- Insulating and sealing rim joists

Classroom presentations
The Science Museum of Minnesota conducted an interactive lyceum program reaching Minnesota schools over 18 days during October, November, and December 2017. In small community schools, students in fourth through sixth grades are invited to attend. The invitation schedule aims to reach out to all students in the Otter Tail service territory every other year. The northern service territory was targeted in 2017. Participation is dependent on school administrators requesting the program. During the 2017 tour, 28 schools were visited, and 2,350 students participated in the lyceums. The program remains popular with the school districts and program material is in line with the Minnesota school curriculum standards.

Additional activities
Energy efficiency and conservation related literature is made available to Minnesota customers upon request including conservation articles included in the Company's bimonthly newsletter including one issue specially designed for kids.

This program has been approved for continuation in the 2018 CIP.

Participation & Budget

2017 A&E Residential Detailed Participation	
Science Museum School Tour	2,350
Web visits tied to advertising spots	12,006
YouTube videos	4,273
Total	18,629

PARTICIPATION AND BUDGET – 2017			
Advertising & Education	**Actual**	**Proposed**	**% of Goal**
Residential Participation	18,629*	10,000	186%
Budget $	$189,318	$175,000	108%

*Web-based ad participation was not included when the original participation goal was established but was added as an effective means to reach customers. In addition, participation in web visits to www.otpco.com has increased significantly from past years.

Advertising and Education – Commercial

Otter Tail's Advertising and Education program operated in conjunction with the Company's Commercial Direct Install program in 2018. The combined program effort provided participating customers in the hard-to-reach small- to mid-sized commercial segment with no-cost energy assessments identifying the top energy efficiency opportunities in the customer's business. The

Company's Advertising and Education budget provided funds for free customer assessments, while the Commercial Direct Install program provided customers with installation of low-cost, easily-installed energy efficiency measures while the assessment was taking place in the customer's place of business.

Participating customers anecdotally expressed satisfaction with the Company's effort to provide free installation of energy efficient technologies that work well in customer business operations. Otter Tail is also following up with all participating customers regarding efficiency opportunities identified during facility assessments. The Company appreciates the opportunity to facilitate completion of efficiency measures by reaching out to local contractors and providing expertise to small- to mid-sized commercial customers on energy efficient opportunities in the customers' businesses.

Participation & Budget

2017 A&E Commercial Detailed Participation	
Mahnomen	32
Red Lake Falls	22
Frazee	22
Total	76

ACTUAL / BUDGET – 2017			
Advertising & Education	**Actual**	**Proposed**	**% of Goal**
Participation	76	100	76%
Commercial Budget $	$24,615	$25,000	98%

COMPRESSED AIR AUDITS - Commercial

The Compressed Air Audit program pays up to 50 percent of compressed audit costs, with a maximum of $10,000 per participant. The project relies on industry consultants to provide professional audit services with an unbiased report on saving energy with compressed air system improvements.

This program has been approved for continuation in the 2018 CIP.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
Compressed Air Audits	**Actual**	**Proposed**	**% of Goal**
Participation	1	4	25%
Budget $	$5,839	$20,000	29%

FINANCING – Commercial

The Financing program is designed to provide low-interest loans for energy-efficiency improvement projects currently included in the Company's CIP. These improvements include, but are not limited to, lighting, motors, variable speed drives, and heat pumps. The difference between the interest expense at the Company's after-tax cost of capital and the expense at the customer's interest rate is the cost charged to the CIP Tracker Account. The interest rate was 1.9 percent for 2017. Commercial customers are given a choice between rebates and financing except for heat pumps where both were offered.

Otter Tail promotes the low-interest Financing program in various resources.

- *Taking Care of Business* commercial CIP booklet.
- *Programs and services guide* provided to contractors and employees.
- Program brochures included with materials requests to customers.
- Part of the Company's web site.

The commercial financing program has been approved for continuation in the 2018 CIP.

Participation & Budget

ACTUAL / BUDGET – 2017			
Financing	**Actual**	**Proposed**	**% of Goal**
Participation	0	5	0%
Commercial Budget $	$15,336	$50,000	31%

IMPLEMENTATION & TRAINING – Residential & Commercial

The Implementation and Training program provides instruction about energy efficient technologies and DSM trends for the Company's design, implementation, and customer service staff. This program also provides training for customers, electricians, realtors, insulation installers, and other contractors. Several energy efficiency workshops are held at various times

through the year in locations in and around the service territory. Otter Tail co-sponsored several of these events with Minnkota Electric Cooperative. Workshops were promoted on our website, in newsletters, and through direct mail pieces. This program has been approved for continuation in the 2017 CIP.

Participation & Budget

ACTUAL / BUDGET – 2017			
Implementation & Training	**Actual**	**Proposed**	**% of Goal**
Residential Participation	36	175	20%
Residential Budget $	$29,692	$40,000	74%
Commercial Participation	507	250	203%
Commercial Budget $	$37,134	$60,000	62%

PROGRAM DEVELOPMENT

Program Development includes CIP strategic market planning analysis, CIP-related resource planning work, and CIP-related regulatory coordination. It also includes program development time for research and studying new energy efficient and DSM technologies.

In 2017, Otter Tail began seeking ways to further enhance load-control strategies for electric water heating. Otter Tail's Water Heating Store & Save, which is included in CIP, has high customer participation delivering energy savings and dollar savings to customers. Otter Tail has hired a Minneapolis based technology firm to help investigate ways to deliver even more benefits to these customers. The project officially began in 2017 with significant research completed on control equipment for existing water heaters as well as a new water heater solution enabled with advanced communication technology. Equipment vendor selection took place in 2017, and a small test group of approximately thirty Otter Tail Power employees have volunteered to allow the equipment installed at their home in quarter one of 2018. Allowing the Company to optimize the load-control algorithm for each water heater should enhance overall net benefits for all customers. Additional information including initial results of this pilot project will be discussed in Otter Tail's 2018 CIP Status Report.

Otter Tail also used development funding for appropriate development research and information from internal and external sources, including Chartwell and E-Source.

Otter Tail's 2011-2013 CIP plan included developing and maintaining a system capable of providing the data necessary for reporting, forecasting, tracking, and processing CIP rebates. The 2017-2019 CIP plan continues work on this system, which is now operating as our rebate

processing and data tracking tool. Continuing work includes adding new programs, development of management dashboards, and reporting tools for program management.

Program Development activities have been approved for continuation in the 2018 CIP.

BUDGET – 2017			
Program Development	**Actual**	**Proposed**	**% of Goal**
Planning – Regulatory Affairs	$182,220	$300,000	61%
Research & Development	$120,845	$180,000	67%

REGULATORY REQUIREMENTS

PUC ASSESSMENTS / REGULATORY (NGEA) ASSESSMENTS

PUC ASSESSMENTS / REGULATORY (NGEA) ASSESSMENTS			
	Actual	**Proposed**	**% of Goal**
PUC Assessments	$5,618	$20,000	28%
Regulatory Assessments (NGEA)	$108,516	$110,000	99%
Made in Minnesota Solar Energy Assessment	$114,860	$114,860	100%
Transmission & Distribution Cost Study	$32,067	$0	0%

ASSESSMENTS	
NGEA Assessment – Technical Assistance	$ 17,717
NGEA Assessment – R&D Grant	$ 79,726
NGEA Assessment – Facilities Efficiency	$ 11,073
NGEA Assessment – Made in Minnesota Solar	$ 114,860
Total NGEA Assessments	**$ 223,376**
Direct PUC Assessments	$ 5,618
Transmission & Distribution Cost Study	$32,607
Total	**$ 261,061**

The Made in Minnesota (MiM) Solar Energy Assessment is the only assessment associated with energy savings. Five Otter Tail customers received MiM funding in 2017. Otter Tail was allocated 80,889 kWh based on its percentage contribution to the total annual CIP contribution to MiM.

MISCELLANEOUS / INACTIVE PROGRAM COSTS

These are inactive and miscellaneous programs. The associated costs, including closing costs for these programs, were charged to the 2017 CIP tracker account. Each is detailed separately below.

ACCOUNTING ADJUSTMENTS

Two accounting adjustments were required in 2017 totaling ($15,021).

The two adjustments occurred in the Energy Star Lighting program: (1) to record the 2017 sale of LEDs given to non-profit organizations for fundraising events in 2016 but not sold in 2016 reflecting a decrease in costs of $3,796; and (2) to record a true up to the 2016 year-end estimated billing from Wisconsin Energy Corporation for the Be Bright program reflecting an increase in costs of $18,817.

Since 1993, Otter Tail has implemented an internal process to handle moving incorrect charges between project work orders. A line item has been added to the CIP Tracker Account to reflect those charges in transition. The Company believes this method allows us to report current year program costs more accurately.

OTTER TAIL POWER COMPANY CIP PROJECTS

Total spending in 2017 on Otter Tail projects was minimal at $710. This cost is associated with air-conditioning control of Otter Tail facilities and is consistent with previous years.

No energy savings were claimed in 2017 for the program.

INACTIVE PROGRAMS

TOWN ENERGY CHALLENGE PILOT

The Rothsay High School SC/EC (Student's for Community Energy Challenge) team (seventh through twelfth grade) promoted conservation at the school and in the community for a five-year commitment. Although the project is now completed, the students who served on the team were given college scholarships based on the number of years of service to be collected their first year of college. The scholarships will continue through 2021.

PC POWER SUPPLY

The PC Power Supply program united electric utilities, the computer industry, and consumers in bringing more efficient computer power supply technology to the marketplace. The program provided manufacturer incentives for certain qualifying energy efficient computer and server product categories and accelerated market adoption for products within each of these categories that meet ENERGY STAR and 80 Plus product efficiency specifications.

A third-party program management and implementation specialist worked directly with PC manufacturers with program outreach efforts and incentives for integrating qualifying power supplies into various manufacturers' computer products. The third-party provided Otter Tail with a monthly report detailing the quantity and measure type of each PC power supply as featured in Otter Tail's approved 2014-2016 triennial CIP filing.

Otter Tail discontinued the PC Power Supply program in 2017 due to low participation. Participation in 2017 reflects carry over activity from the 2016 program year.

Participation & Budget

PARTICIPATION AND BUDGET – 2017			
PC Power Supply	**Actual**	**Proposed**	**% of Goal**
Participation	66	-	-
Budget $	$1,508	$ -	- %

Evaluation Methodology

Reported energy and demand savings are based on actual measure quantities and types as reported by Otter Tail's third-party program specialist. Energy and demand savings for this program are based on Attachment B: Electric Product Assumptions, approved in the Company's 2014-2016 triennial plan.

Energy Savings & Adjustments

ENERGY AND DEMAND RESULTS – 2017	
PC Power Supply	**At the Generator (DSMore Summer Coincident Peak kW)**
Energy Savings – kWh	17,691
Demand Savings – kW	4.25

CARRYING COSTS

Charges totaled $102,386 for carrying costs on the balance of the CIP Tracker, as shown in Appendix A, Table 1.

The Commission and Otter Tail have agreed that allowing carrying charges to be added to the CIP Tracker Account will compensate the Company for the time value of the money invested in CIP programs.

As set in the MNPUC's September 26, 2015 Order, E017/M-14-201, the monthly carrying charge has been modified on the CIP tracker-account balance to the short-term cost of debt set in the Company's last rate case, E017/GR-15-1033.

Otter Tail does not count the carrying costs charges toward the spending requirement (see Appendix A, Table 5 Status Report Recap) but does include the charges in the CIP Tracker for recovery.

Conservation Cost Recovery Adjustment

CONSERVATION COST RECOVERY ADJUSTMENT

This filing constitutes the 24th Annual Filing to Update the Conservation Improvement Program (CIP) Rider (Annual Filing) that Otter Tail Power Company (Otter Tail, the Company) has made with the Minnesota Public Utilities Commission (Commission, MPUC) to update the CIP Rider adjustment, more commonly referred to as the Conservation Cost Recovery Adjustment (CCRA).

The CCRA may be adjusted annually by approval of the Commission. The recoverable CIP tracker balance is determined as described below, starting with the Commission accepted CIP tracker account balance as of the end of the prior year. The following adjustments are made from this starting point:

1. Add financial incentives awarded by the Commission not reflected in the prior year-end CIP tracker balance;
2. Add current year CIP approved spending levels;
3. Subtract current year CIP cost recovery through base rates as estimated based on Company's projected retail sales.

All costs appropriately charged to the CIP tracker account shall be eligible for recovery through this rider and all revenues received from the application of the CCRA shall be credited to the CIP tracker account. Table 1 illustrates the last ten years of the CCRA charge.

Table 1

Year	CIP Surcharge / CCRA Factor	Previous Year Ending Tracker Balance
Jul 2008 / Jun 2009	0.50%	$490,714
Jul 2009 / Jun 2010	1.75%	$265,057
Jul 2010 / Jun 2011	3.00%	$1,927,314
Jul 2011 / Jun 2012	3.00% / 3.80%	$3,721,665
Jul 2012 / Jun 2013	3.80% / $0.00142/kWh	$5,188,129
Jul 2013 / Jun 2014	$0.00175/kWh	$3,572,621
Oct 2014 / Sep 2015	$0.00263	$4,835,558
Oct 2015 / Sep 2016	$0.00287	$5,731,183
Oct 2016 / Sep 2017	$0.00275	$4,333,061
Oct 2017 / Sep 2018	$0.00536	$4,835,852
Oct 2018 / Sep 2019	$0.00600	$7,362,345

Otter Tail has included the CIP tracker, Exhibit 1, which uses the Commission approved per-kWh method from October 2018 through September 2019. For October 2018 through September 2019, Otter Tail is proposing to change the surcharge to $0.00600/kWh. Exhibit 2 illustrates the monthly impacts for each of the Company's ten rate classes.

Calculation of CCRA and Conservation Cost Recovery Charge (CCRC)

During the 21-month period from end of year 2017 through the end of September 2019, Otter Tail plans to reduce the CIP Tracker balance of $7,362,345 to an estimated $1,740,225, as illustrated in Table 2 below.

Table 2

	Jan 2018 - Sep 2018	Oct 2018 - Sep 2019
Beginning Balance	**$7,362,345**	**$5,409,507**
Carrying Charges	$99,974	$61,782
CIP Program Expenses	$5,290,431	$7,734,123
CIP Incentive Proposed	$2,642,360	$2,753,418
CCRC through Base Rates	($2,934,178)	($3,852,672)
CCRA - CIP Rider	($7,051,426)	($10,365,933)
Ending Balance	**$5,409,507**	**$1,740,225**
CCRA Method	**$0.00536/ kWh**	**$0.00600/ kWh**

In addition, Otter Tail estimates the following impacts to the CIP Tracker balance during the 21-month period:

- $18,582,088 of additional expenses from carrying charges, CIP incentive, and CIP program expenses.
- $6,786,849 collected from the CCRC.
- $17,417,359 collected from the CCRA, of which $10,365,933 will be collected during the 12 months from October 2018-September 2019.

As illustrated in Exhibit 1, the proposed change in the surcharge will increase the CCRA by approximately 12 percent. By October 1, 2019, the CIP tracker balance is projected to decrease to an estimated $1,740,225. Otter Tail currently receives a carrying charge on the outstanding CIP tracker account balance based on its short-term cost of debt rate of 2.55 percent.

The amounts on lines 4 and 5 of Exhibit 1 reflect the projected expenditures and financial incentive for 2018 and 2019 through September 2019. Line 6 removes from the CIP tracker the portion of CIP costs that are included in base rates. The base rate amount from January 2018 through September 2018 is calculated each month as forecasted retail sales multiplied by the approved CCRC in base rates of $0.00223 per kWh. This rate was approved in Otter Tail's 2016 general rate case (Docket No. E017/GR-15-1033).

The proposed 2017 CCRA is calculated assuming the rate is approved and is effective October 1, 2018. If implementation of the 2018 CCRA occurs after October 1, 2018, the CCRA may need to be adjusted to recover the approved revenue requirements over the remaining months of the period, through September 2019. This approach would ensure cost recovery and approved eligible costs match. If it is necessary to adjust the CCRA, Otter Tail proposes to calculate the final 2018 CCRA and include it with the corresponding rate schedule pages in a compliance filing in this docket.

The redline and final versions of the CIP rider rate schedules are included immediately following Exhibits 1 and 2. The CIP rider rate schedule included in this filing accommodates the change to the CCRA based on the proposed $0.00600 per-kWh method of recovery. Once the 2018/2019 CCRA is approved, the Otter Tail will file the corresponding rate schedule that complies with the Commission's Order in this docket.

CONCLUSION

Otter Tail respectfully requests the following from the MPUC:

1. Approval of the 2017 CIP Tracker, resulting in a year-end balance of $7,362,345.
2. Approval to implement the CCRA factor of $0.00600/kWh reflected on customers' bills through the Resource Adjustment starting with bills rendered on and after October 1, 2018.
3. Approval of a variance to Minnesota Rule 7820.3500 to allow Otter Tail to continue to combine the FCA with the Conservation Improvement Adjustment on customer bills.

Otter Tail Power Company **Exhibit 1**

CIP TRACKER AND CALCULATION OF PROPOSED CCRA **Page 1 of 1**

-based on projected 2018 sales and 2017 financial incentive

		January 2018	February* 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	Total
1	Beginning of Period Balance	$7,362,345	$6,255,919	$5,940,433	$5,389,858	$4,814,187	$4,291,379	$3,780,593	$3,312,731	$5,808,690	
2	Carrying Charge Rate	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	
3	Monthly Carrying Charge	$15,675	$13,319	$12,648	$11,475	$10,250	$9,137	$8,049	$7,053	$12,367	$99,974
4	CIP Program Charges	$309,062	$1,030,817	$639,643	$503,939	$403,290	$416,408	$517,749	$884,579	$584,945	$5,290,431
5	CIP Incentive	$0	$0	$0	$0	$0	$0	$0	$2,642,360	$0	$2,642,360
6	Less: CIP Recovery thru Base Rates	($420,677)	($399,608)	($353,411)	($320,569)	($275,106)	($275,101)	($291,945)	($304,982)	($292,778)	($2,934,178)
7	Less: Conservation Adjustment (CIP Revenue)	($1,010,487)	($960,014)	($849,454)	($770,517)	($661,241)	($661,230)	($701,715)	($733,051)	($703,717)	($7,051,426)
8	End of Period Balance	$6,255,919	$5,940,433	$5,389,858	$4,814,187	$4,291,379	$3,780,593	$3,312,731	$5,808,690	$5,409,507	
9	**CCRA through September 2018**	**$0.00536**									
10	Projected sales (kWh)	176,939,131	176,068,408	158,480,202	143,753,092	123,365,893	123,363,725	130,917,036	136,763,262	131,290,524	
11	CCRC / kWh	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	

		October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	September 2019	Total
1	Beginning of Period Balance	$5,409,507	$4,929,641	$4,426,262	$4,537,747	$3,555,532	$2,659,966	$2,027,108	$1,372,677	$779,709	$199,397	($338,322)	($541,292)	$29,017,932
2	Carrying Charge Rate	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	2.55%	
3	Monthly Carrying Charge	$11,517	$10,496	$9,424	$9,661	$7,570	$5,663	$4,316	$2,923	$1,660	$425	($720)	($1,152)	$61,782
4	CIP Program Charges	$532,940	$643,793	$1,399,744	$471,007	$550,695	$669,660	$527,588	$422,215	$435,949	$542,046	$926,091	$612,395	$7,734,123
5	CIP Incentive	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,753,418	$2,753,418
6	Less: CIP Recovery thru Base Rates	($277,550)	($313,682)	($351,620)	($396,383)	($393,930)	($354,465)	($321,449)	($275,866)	($275,816)	($292,688)	($305,735)	($293,489)	($3,852,672)
7	Less: Conservation Adjustment (CIP Revenue)	($746,772)	($843,986)	($946,062)	($1,066,501)	($1,059,901)	($953,716)	($864,886)	($742,240)	($742,105)	($787,502)	($822,605)	($789,656)	($10,365,933)
8	End of Period Balance	$4,929,641	$4,426,262	$4,537,747	$3,555,532	$2,659,966	$2,027,108	$1,372,677	$779,709	$199,397	($338,322)	($541,292)	$1,740,225	
9	**CCRA PROPOSED ($ / kWh)**	**$0.00600**												
10	Projected sales (kWh)	124,462,072	140,664,357	157,677,072	177,750,111	176,650,189	158,952,745	144,147,722	123,706,621	123,684,208	131,250,259	137,100,867	131,609,277	1,727,655,500
11	CCRC / kWh	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	$0.00223	

*Actual data was used through February 2018, forecast used thereafter.

Otter Tail Power Company **Exhibit 2**

Comparison of Monthly Bill Impacts

CIP Surcharge (CCRA) is based on $0.00600 / kWh

			Monthly Impacts			
Rate Class	**Average kWh/Bill**	**Average $/Bill before CCRA**	**Current CCRA**	**Proposed CCRA**	**Monthly Bill $ Change**	**Monthly Bill % Change**
Residential	803	$86.30	$4.30	$4.82	$0.51	0.60%
Farm	2,139	$213.88	$11.46	$12.83	$1.37	0.64%
General Service	2,661	$261.62	$14.26	$15.97	$1.70	0.65%
Large General Service	117,817	$8,815.82	$631.50	$706.90	$75.40	0.86%
Irrigation	2,403	$226.69	$12.88	$14.42	$1.54	0.68%
Outdoor Lighting	80	$13.57	$0.43	$0.48	$0.05	0.38%
Municipal Pumping	3,119	$258.83	$16.72	$18.71	$2.00	0.77%
Water Heating Control	219	$18.07	$1.17	$1.31	$0.14	0.77%
Interruptible Load	1,838	$105.24	$9.85	$11.03	$1.18	1.12%
Deferred Load	1,423	$81.58	$7.63	$8.54	$0.91	1.12%

*All average data comes from Otter Tail's approved rates in Schedule-E that was filed August 20, 2017, in compliance to the PUC's order (Docket no. E017/GR-15-1033).

CONSERVATION IMPROVEMENT PROJECT (CIP) RIDER

DESCRIPTION	RATE CODE
Conservation Surcharge	32-530
CIP Exempt Adjustment Credit	32-532

RULES AND REGULATIONS: Terms and conditions of this electric rate schedule and the General Rules and Regulations govern use of this rider.

APPLICATION OF RIDER: This rider is applicable to any electric service under all of the Company's retail rate schedules, except for Standby Service, Section 11.01 and those customers who have been granted an exemption under a large customer facility. The exemptions are as follows:

"Large Customer Facility" customers that have been exempted from the Company's Conservation Improvement Program charges pursuant to Minn. Stat. 216B.241, Subd. 1a (b) shall receive a monthly exemption from conservation improvement program charges pursuant to Minn. Stat.216B.16, subd. 6b Energy Conservation Improvement. Such monthly exemption will be effective beginning January 1 of the year following the grant of exemption. Upon exemption from conservation program charges, the "Large Customer Facility" customers can no longer participate in the Company's Energy Conservation Improvement Program.

CONSERVATION SURCHARGE AND EXEMPTION ADJUSTMENT: There shall be added to each non-exempt Customer's bill a Conservation Surcharge based on the applicable Conservation Surcharge Factor multiplied by the Customer's monthly energy use. The Conservation Surcharge shall not be applied to Meter(s) on Customer Account(s) granted exemption by the Commissioner of the Minnesota Department of Commerce, Division of Energy Resources (or successor agency) from CIP costs pursuant to Minn. Stat. 216B.241. Meter(s) on Customer Account(s) granted an exemption shall receive a Conservation Cost Recovery Charge (CCRC) Exemption Adjustment Credit.

The Conservation Surcharge Factor is $0.~~00536~~ 00600 per kWh.

DETERMINATION OF CONSERVATION SURCHARGE FACTOR: The Conservation Surcharge shall be the quotient of the Recoverable CIP Tracker Balance, divided by projected Minnesota non-exempt retail energy sales for a designated 12-month recovery period. The Surcharge may be adjusted annually by approval of the Minnesota Public Utilities Commission (MNPUC). The Recoverable CIP Tracker Balance is determined as described below, starting with the MNPUC accepted CIP Tracker account balance as of the end of the prior year. From this starting point:

1. Add financial incentives awarded by the MNPUC not reflected in the prior year-end CIP Tracker balance;

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Appendix A- Tables

Table 1
2017 CALCULATION OF CARRYING CHARGE ON CONSERVATION DOLLARS HELD IN CIP TRACKER ACCOUNT
Financial Incentive Project - Conservation Improvement Programs
Otter Tail Power Company

	Capital Expenditures (A)	Operating Expenses (B)	Revenues Received (C)	Dr. 1860.3100 Cr. 4310.4000 Carrying Charge 0.79% Jan-Apr 2.5549% May-Dec (D)	Balance Account 1860.3000 + 1860.3100 (E)
Balance Dec. 31, 2016	0.00	96,825,733.89	(93,364,268.55)	959,479.39	4,835,851.66
January:					
Carrying Charge	--	--	--	3,183.60	3,183.60
Trf Carrying Charge Bal					0.00
Labor Accrual Adj					0.00
Activity	0.00	396,105.97	(1,144,865.98)	--	(748,760.01)
Deferred Taxes	--	--	--	--	--
Balance January 31, 2017	0.00	97,221,839.86	(94,509,134.53)	962,662.99	4,090,275.25
February:					
Carrying Charge	--	--	--	2,692.76	2,692.76
Labor Accrual Adj					0.00
Activity	0.00	463,121.68	(745,033.67)	--	(281,911.99)
Deferred Taxes	--	--	--	--	--
Balance February 28, 2017	0.00	97,684,961.54	(95,254,168.20)	965,355.75	3,811,056.02
March:					
Carrying Charge	--	--	--	2,508.95	2,508.95
Labor Accrual Adj					0.00
Activity	0.00	563,168.35	(681,604.58)	--	(118,436.23)
Deferred Taxes	--	--	--	--	--
Balance March 31, 2017	0.00	98,248,129.89	(95,935,772.78)	967,864.70	3,695,128.74
April:					
Carrying Charge	--	--	--	2,432.63	2,432.63
Labor Accrual Adj					0.00
Activity	0.00	443,689.44	(626,766.57)	--	(183,077.13)
Deferred Taxes	--			--	--
Balance April 30, 2017	0.00	98,691,819.33	(96,562,539.35)	970,297.33	3,514,484.24
May:					
Carrying Charge	--	--	--	7,482.63	7,482.63
Bonus/Incentive					0.00
Labor Accrual Adj					0.00
Activity	0.00	355,073.14	(559,870.23)	--	(204,797.09)
Deferred Taxes	--	--	--	--	--
Balance May 31, 2017	0.00	99,046,892.47	(97,122,409.58)	977,779.96	3,317,169.78
June:					
Carrying Charge	--	--	--	7,062.53	7,062.53
Bonus/Incentive					0.00
Labor Accrual Adj					0.00
Activity	0.00	366,623.28	(576,904.02)	--	(210,280.74)
Deferred Taxes	--	--	--	--	--
Balance June 30, 2017	0.00	99,413,515.75	(97,699,313.60)	984,842.49	3,113,951.57
July:					
Carrying Charge	--	--	--	6,629.86	6,629.86
Bonus/Incentive					0.00
Labor Accrual Adj					
Activity	0.00	455,847.66	(572,512.99)	--	(116,665.33)
Deferred Taxes	--	--	--	--	--
Balance July 31, 2017	0.00	99,869,363.41	(98,271,826.59)	991,472.35	3,003,916.10

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August:					
Carrying Charge	--	--		6,395.59	6,395.59
Bonus/Incentive		5,031,678.00			5,031,678.00
Labor Accrual Adj					0.00
Activity	0.00	778,820.84	(619,561.64)	--	159,259.20
Deferred Taxes	--	--	--	--	--
Balance August 31, 2017	0.00	105,679,862.25	(98,891,388.23)	997,867.94	8,201,248.89
September:					
Carrying Charge	--	--	--	17,461.14	17,461.14
Lost Margin & Bonus/Incentive					0.00
Labor Accrual Adj					0.00
Activity	0.00	515,010.17	(586,934.86)	--	(71,924.69)
Deferred Taxes	--	--	--	--	--
Balance September 30, 2017	0.00	106,194,872.42	(99,478,323.09)	1,015,329.08	8,146,785.34
October:					
Carrying Charge	--	--	--	14,345.18	14,345.18
Lost Margin & Bonus/Incentive					0.00
Labor Accrual Adj					0.00
Activity	0.00	469,223.00	(790,642.95)	--	(321,419.95)
Deferred Taxes	--	--	--	--	--
Balance October 31, 2017	0.00	106,664,095.42	(100,268,966.04)	1,029,674.26	7,839,710.57
November:					
Carrying Charge	--		--	16,697.78	16,697.78
Labor Accrual Adj					0.00
Activity	0.00	566,822.15	(1,149,320.61)	--	(582,498.46)
Deferred Taxes	--	--	--	--	--
Balance November 30, 2017	0.00	107,230,917.57	(101,418,286.65)	1,046,372.04	7,273,909.89
December:					
Carrying Charge	--	--	--	15,493.15	15,493.15
Lost Margin & Bonus/Incentive					0.00
Labor Accrual Adj					0.00
Activity	0.00	1,232,393.81	(1,162,451.20)	--	69,942.61
Deferred Taxes	--	--	--	--	--
Balance December 31, 2017	0.00	108,463,311.38	(102,580,737.85)	1,061,865.19	7,359,345.65

Table 2
2017 INCENTIVE MECHANISM
Financial Incentive Project - Conservation Improvement Programs
Otter Tail Power Company

Inputs	**2017**	
3-year Weather-Normalized Sales Average (kWh)	1,741,875,298	(2013-2015 WN Sales)
1.0% Energy Savings	17,418,753	
Size of steps in Energy Savings	1,741,875	
Estimated CIP Expenditures	$7,519,350	
Estimated CIP Energy Goal	41,908,098	
Estimated Net Benefits at Approved Goal	$14,490,884	excludes Company-Owned Street Lighting, POP Solar, and Assessments
Energy savings at 1.5%	26,128,129	

Incentive Calibration	**2017**	
Max Percent of Benefits Awarded	13.5%	maximum net benefits awarded
Earning Threshold	1.0%	
Max Achievement Level	1.7%	
Max Percent of Expenditures	40.0%	
Increment (% Points)	7.5	% Points

Actual Electric CIP Incentive Results	**2017**	
Spending	$6,605,899	
Energy Saved	52,497,167	
Net Benefits Achieved	$23,626,518	excludes House Therapy, Company-Owned Street Lighting, POP Solar, and Assessments
Resulting Incentive		
Achievement Level	3.01%	
Percent of Net Benefits Awarded	13.50%	
Expenditure Cap	$2,642,360	
Financial Incentive Award	**$2,642,360**	

Incentive/First Year kWh Saved $	$0.0503
Incentive/Net Benefits	11.18%
Incentive/CIP Expenditures	40.00%

Cost per kWh	$0.13

Table 3
2017 PROJECT COSTS, SAVINGS, AND BENEFITS
Financial Incentive Project
Otter Tail Power Company

	2017 Proposed Savings, Costs, and Benefits				2017 Actual Savings, Costs, and Benefits			
	kWh Savings	Expenditures	Total Benefits	Net Benefits	kWh Savings	Expenditures	Total Benefits	Net Benefits
Residential								
Residential Air Conditioning Control	131,611	$85,000	$339,622	$254,622	81,466	$56,552	$210,223	$153,671
Appliance Recycling	241,851	$65,000	$86,292	$21,292	401,709	$92,291	$149,410	$57,119
Energy Star Lighting	3,581,780	$400,000	$1,970,109	$1,570,109	4,721,888	$336,283	$2,731,006	$2,394,722
Electronically Commutated Motors	90,418	$30,000	$89,523	$59,523	176,818	$38,789	$178,080	$139,291
Energy Feedback Program	3,501,931	$302,100	$662,308	$360,208	4,506,940	$304,434	$864,157	$559,722
Residential Heat Pumps	1,855,208	$275,000	$1,032,982	$757,982	2,398,200	$277,377	$1,498,125	$1,220,748
Home Insulation	165,584	$45,000	$87,132	$42,132	108,647	$25,016	$58,379	$33,362
Home Transformer	540,788	$87,000	$382,178	$295,178	440,788	$53,942	$469,568	$415,626
School Kit Program	1,154,443	$130,000	$441,705	$311,705	1,754,165	$105,290	$1,653,569	$1,548,279
Smart Thermostats	312,221	$50,000	$86,081	$36,081	141,951	$28,268	$43,123	$14,856
Water Heater Store & Save	585,858	$35,000	$962,499	$927,499	581,908	$23,267	$1,273,819	$1,250,552
Advertising & Education	0	$175,000	$0	($175,000)	0	$189,318	$0	($189,318)
Implementation & Training	0	$40,000	$0	($40,000)	0	$29,692	$0	($29,692)
Total - Residential	12,161,693	$1,719,100	$6,140,430	$4,421,330	15,314,480	$1,560,519	$9,129,457	$7,568,938
Low-Income								
House Therapy	230,355	$150,000	$102,444	($47,556)	255,368	$161,155	$107,006	($54,149)
Total - Low-Income	230,355	$150,000	$102,444	($47,556)	255,368	$161,155	$107,006	($54,149)
Commercial								
Adjustable Speed Drives	5,412,302	$379,000	$2,869,418	$2,490,418	4,655,659	$276,952	$2,541,815	$2,264,862
Commercial Cool Savings	55,288	$30,000	$317,296	$287,296	28,617	$13,743	$164,233	$150,490
Commercial Design Assistance	1,417,341	$345,160	$1,325,398	$980,238	838,600	$179,873	$776,043	$596,169
Commercial Direct Install	361,594	$28,740	$58,196	$29,456	250,702	$31,276	$50,913	$19,637
Compressed Air Efficiency	1,026,919	$139,514	$412,616	$273,102	200,657	$61,568	$132,866	$71,298
Custom Effiency Grants	1,937,520	$296,500	$1,523,708	$1,227,208	2,213,216	$264,124	$2,797,997	$2,533,873
Commercial Heat Pumps	1,284,111	$205,000	$661,180	$456,180	4,631,320	$614,339	$1,731,500	$1,117,161
Commercial & Industrial Focused Efficiency	1,614,600	$220,000	$964,449	$744,449	1,761,209	$210,877	$860,028	$649,151
Lighting Retrofit	5,771,885	$950,600	$2,788,421	$1,837,821	16,858,464	$1,894,087	$9,319,416	$7,425,329
Lighting - New Construction	2,834,125	$166,000	$1,460,814	$1,294,814	2,956,464	$131,459	$1,500,744	$1,369,285
Midstream Commercial Kitchen Equipment	555,820	$88,200	$322,442	$234,242	0	$61,936	$0	($61,936)
Motors	731,744	$133,000	$378,604	$245,604	407,600	$105,500	$243,278	$137,778
Recommissioning/Retrocommissioning	2,174,328	$188,000	$455,533	$267,533	755,232	$159,012	$144,693	($14,318)
Refrigeration	1,243,764	$130,085	$407,124	$277,039	1,351,887	$168,155	$403,245	$235,090
Roof Top Unit Efficiency	526,941	$51,885	$111,040	$59,155	0	$36,422	$0	($36,422)
Advertising & Education	0	$25,000	$0	($25,000)	0	$24,615	$0	($24,615)
Compressed Air Audits	0	$20,000	$0	($20,000)	0	$5,839	$0	($5,839)
Financing	0	$50,000	$0	($50,000)	0	$15,336	$0	($15,336)
Implementation & Training	0	$60,000	$0	($60,000)	0	$37,134	$0	($37,134)
Total - Commercial	26,948,283	$3,506,684	$14,056,238	$10,549,553	36,909,627	$4,292,249	$20,666,772	$16,374,523

Table 3
2017 PROJECT COSTS, SAVINGS, AND BENEFITS
Financial Incentive Project
Otter Tail Power Company

	2017 Proposed Savings, Costs, and Benefits				2017 Actual Savings, Costs, and Benefits			
	kWh Savings	**Expenditures**	**Total Benefits**	**Net Benefits**	**kWh Savings**	**Expenditures**	**Total Benefits**	**Net Benefits**
Other Projects								
Company-Owned Street & Area Lighting	2,382,518	$1,303,846	$1,157,854	($145,992)	0	$0	$0	$0
Publicy-Owned Property Solar	107,250	$114,860	$105,243	($9,617)	0	$9,961	$0	($9,961)
Total - Other	2,489,768	$1,418,706	$1,263,097	($155,609)	0	$9,961	$0	($9,961)
Program Development And Regulatory Requirements								
Planning - Regulatory Affairs	0	$300,000	$0	($300,000)	0	$182,220	$0	($182,220)
Research & Development	0	$180,000	$0	($180,000)	0	$120,845	$0	($120,845)
NGEA - Regulatory Assessments	0	$110,000	$0	($110,000)	0	$108,516	$0	($108,516)
PUC Assessments	0	$20,000	$0	($20,000)	0	$5,618	$0	($5,618)
Made in Minnesota Solar Energy Assesment	78,000	$114,860	$0	($114,860)	87,069	$114,860	$0	($114,860)
Transmission & Distribution Cost Study	0	$0	$0	$0	0	$32,067	$0	($32,067)
Total - Development & Regulatory Requirements	78,000	$724,860	$0	($724,860)	87,069	$564,126	$0	($564,126)
Miscellaneous								
Town Energy Challenge - Inactive	0	$0	$0	$0	0	$650	$0	($650)
PC Power Supply -- DISCONTINUED	0	$0	$0	$0	17,691	$1,508	$4,010	$2,503
Company CIP Projects	0	$0	$0	$0	0	$710	$0	($710)
Accounting Adjustments	0	$0	$0	$0	0	$15,021	$0	($15,021)
Total - Miscellaneous	0	$0	$0	$0	17,691	$17,889	$4,010	($13,878)
Total - All CIP	41,908,098	$7,519,350	$21,562,209	$14,042,859	52,584,236	$6,605,899	$29,907,246	$23,301,346

All numbers are for a single year - 2017. DSMORE software was used for the analysis, with figures discounted to 2017.

Table 4
2017 CIP Program Status Report / CIP Tracker Recap
Financial Incentive Project -- 2017 Conservation Improvement Programs
Otter Tail Power Company

	As Filed - 2017 Proposed Benefit/Cost Ratios				Actual - 2017 Benefit/Cost Ratios			
	Utility Test	**RIM Test**	**Societal Test**	**Participant Test**	**Utility Test**	**RIM Test**	**Societal Test**	**Participant Test**
Residential								
Residential Air Conditioning Control	4.00	3.50	4.02	inf.	3.72	3.22	3.74	inf.
Appliance Recycling	1.33	0.41	2.35	inf.	1.62	0.42	2.88	inf.
Energy Star Lighting	4.93	0.53	5.50	10.65	8.12	0.53	5.88	11.19
Electronically Commutated Motors	2.98	0.71	3.47	5.90	4.59	0.70	4.21	6.39
Energy Feedback Program	2.19	0.52	2.68	inf.	2.84	0.53	3.47	inf.
Residential Heat Pumps	3.76	0.47	2.61	5.31	5.40	0.51	2.68	4.74
Home Insulation	1.94	0.39	1.73	4.29	2.33	0.37	1.96	5.82
Home Transformer	4.39	0.63	8.27	96.64	8.71	0.88	13.49	inf.
School Kit Program	3.40	0.47	11.46	inf.	15.70	1.13	20.15	inf.
Smart Thermostats	1.72	0.31	2.67	18.36	1.53	1.53	2.21	0.79
Water Heater Store & Save	27.50	10.76	27.74	inf.	54.75	15.87	55.10	inf.
Advertising & Education	0.00	0.00	0.00	inf.	0.00	0.00	0.00	inf.
Implementation & Training	0.00	0.00	0.00	inf.	0.00	0.00	0.00	inf.
Total - Residential	3.57	0.62	3.95	10.22	5.85	0.71	4.83	9.96
Low-Income								
House Therapy	0.68	0.31	8.89	inf.	0.66	0.30	5.70	inf.
Total - Low-Income	0.68	0.31	8.89	inf.	0.66	0.30	5.70	inf.
Commercial								
Adjustable Speed Drives	7.57	0.76	6.53	5.52	9.18	0.76	5.29	4.64
Commercial Cool Savings	10.58	6.34	10.60	inf.	11.95	4.64	20.69	inf.
Commercial Design Assistance	3.84	0.78	0.79	0.53	4.31	0.84	2.27	1.72
Commercial Direct Install	2.02	0.45	6.38	inf.	1.63	0.46	2.36	10.42
Compressed Air Efficiency	2.95	0.67	3.31	3.74	2.16	0.66	1.64	1.74
Commercial Heat Pumps	5.14	0.92	2.20	1.34	4.55	0.66	1.58	1.58
Custom Effiency Grants	3.23	0.52	2.08	2.65	6.56	0.83	3.34	3.03
Commercial & Industrial Focused Efficiency	4.38	0.83	2.98	2.66	4.08	0.80	2.84	2.91
Lighting Retrofit	2.93	0.67	1.44	1.37	4.92	0.71	2.63	2.54
Lighting - New Construction	8.80	0.76	6.44	5.53	11.42	0.73	5.24	4.91
Midstream Commercial Kitchen Equipment	3.66	0.75	3.40	4.00	0.00	0.00	0.00	inf.
Motors	2.85	0.63	1.77	1.76	2.31	0.63	2.47	2.96
Recommissioning/Retrocommissioning	2.42	0.53	2.36	4.03	0.91	0.38	0.85	1.71
Refrigeration	3.13	0.66	3.40	4.36	2.40	0.61	2.52	3.43
Roof Top Unit Efficiency	2.14	0.49	0.66	0.95	0.00	0.00	0.00	inf.
Advertising & Education	0.00	0.00	0.00	inf.	0.00	0.00	0.00	inf.
Compressed Air Audits	0.00	0.00	0.00	inf.	0.00	0.00	0.00	0.80
Financing	0.00	0.00	0.00	inf.	0.00	0.00	0.00	inf.
Implementation & Training	0.00	0.00	0.00	inf.	0.00	0.00	0.00	inf.
Total - Commercial	4.01	0.73	2.07	1.84	4.81	0.71	2.61	2.55

Table 4
2017 CIP Program Status Report / CIP Tracker Recap
Financial Incentive Project -- 2017 Conservation Improvement Programs
Otter Tail Power Company

	As Filed - 2017 Proposed Benefit/Cost Ratios				Actual - 2017 Benefit/Cost Ratios			
	Utility Test	**RIM Test**	**Societal Test**	**Participant Test**	**Utility Test**	**RIM Test**	**Societal Test**	**Participant Test**
Other Projects								
Company-Owned Street & Area Lighting	0.89	0.33	2.05	inf.	inf.	inf.	inf.	inf.
Publicy-Owned Property Solar	0.92	0.47	0.63	0.71	0.00	0.00	0.00	inf.
Total - Other	0.89	0.34	1.74	8.86	0.00	0.00	0.00	inf.
Program Development And Regulatory Requirements								
Planning - Regulatory Affairs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Research & Development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NGEA - Regulatory Assessments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PUC Assessments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Made in Minnesota Solar Energy Assesment	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transmission & Distribution Cost Study	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Development & Regulatory Requirements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Miscellaneous								
Town Energy Challenge - Inactive	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PC Power Supply -- DISCONTINUED	0.00	0.00	0.00	0.00	2.66	0.60	3.44	8.80
Company CIP Projects	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Accounting Adjustments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Miscellaneous	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - All CIP	2.87	0.63	2.23	2.95	4.53	0.70	2.90	3.52

Table 5
2017 CIP Program Status Report / CIP Tracker Recap
Financial Incentive Project -- 2017 Conservation Improvement Programs
Otter Tail Power Company

	2017 Expenditures			2017 Participation			2017 Energy Savings - kWh			2017 Coincident Demand Savings - kW		
	Actual	Budget	% of Goal	Actual	Budget	% of Goal	Actual	Budget	% of Goal	Actual	Budget	% of Goal
Residential												
Residential Air Conditioning Control	$56,552	$85,000	67%	2,627	4,244	62%	81,466	131,611	62%	1,942.63	3,138.38	62%
Appliance Recycling	$92,291	$65,000	142%	388	230	169%	401,709	241,851	166%	57.44	34.05	169%
Energy Star Lighting	$336,283	$400,000	84%	129,587	100,000	130%	4,721,888	3,581,780	132%	551.27	433.90	127%
Electronically Commutated Motors	$38,789	$30,000	129%	227	120	189%	176,818	90,418	196%	47.83	27.55	174%
Energy Feedback Program	$304,434	$302,100	101%	29,715	30,500	97%	4,506,940	3,501,931	129%	4,193.31	3,174.99	132%
Residential Heat Pumps	$277,377	$275,000	101%	150	102	147%	2,398,200	1,855,208	129%	185.08	165.46	112%
Home Insulation	$25,016	$45,000	56%	20	40	50%	108,647	165,584	66%	3.44	8.76	39%
Home Transformer	$53,942	$87,000	62%	88	100	88%	440,788	540,788	82%	81.03	100.10	81%
School Kit Program	$105,290	$130,000	81%	1,511	1,000	151%	1,754,165	1,154,443	152%	144.66	96.00	151%
Smart Thermostats	$28,268	$50,000	57%	50	140	36%	141,951	312,221	45%	2.25	1.55	145%
Water Heater Store & Save	$23,267	$35,000	66%	16,056	16,165	99%	581,908	585,858	99%	11,752.22	8,839.20	133%
Advertising & Education	$189,318	$175,000	108%	18,629	10,000	186%	0	0	0%	0.00	0.00	0%
Implementation & Training	$29,692	$40,000	74%	36	175	20%	0	0	0%	0.00	0.00	0%
Total - Residential	$1,560,519	$1,719,100	91%	199,084	162,816	122%	15,314,480	12,161,693	126%	18,961.16	16,019.94	118%
Low-Income												
House Therapy	$161,155	$150,000	107%	122	130	94%	255,368	230,355	111%	26.58	24.45	109%
Total - Low-Income	$161,155	$150,000	107%	122	130	94%	255,368	230,355	111%	26.58	24.45	109%
Commercial												
Adjustable Speed Drives	$276,952	$379,000	73%	122	152	80%	4,655,659	5,412,302	86%	553.40	707.23	78%
Commercial Cool Savings	$13,743	$30,000	46%	271	512	53%	28,617	55,288	52%	1,486.20	2,871.32	52%
Commercial Design Assistance	$179,873	$345,160	52%	4	6	67%	838,600	1,417,341	59%	211.47	388.26	54%
Commercial Direct Install	$31,276	$28,740	109%	76	110	69%	250,702	361,594	69%	30.46	51.10	60%
Compressed Air Efficiency	$61,568	$139,514	44%	10	23	43%	200,657	1,026,919	20%	38.47	147.20	26%
Custom Effiency Grants	$264,124	$296,500	89%	44	30	147%	2,213,216	1,937,520	114%	1,298.09	419.80	309%
Commercial Heat Pumps	$614,339	$205,000	300%	294	84	350%	4,631,320	1,284,111	361%	497.58	129.00	386%
Commercial & Industrial Focused Efficiency	$210,877	$220,000	96%	2	1	200%	1,761,209	1,614,600	109%	292.46	382.77	76%
Lighting Retrofit	$1,894,087	$950,600	199%	797	495	161%	16,858,464	5,771,885	292%	2,609.30	998.90	261%
Lighting - New Construction	$131,459	$166,000	79%	264	193	137%	2,956,464	2,834,125	104%	402.40	413.29	97%
Midstream Commercial Kitchen Equipment	$61,936	$88,200	70%	0	100	0%	0	555,820	0%	0.00	99.89	0%
Motors	$105,500	$133,000	79%	139	205	68%	407,600	731,744	56%	60.81	89.66	68%
Recommissioning/Retrocommissioning	$159,012	$188,000	85%	5	4	125%	755,232	2,174,328	35%	4.10	75.35	5%
Refrigeration	$168,155	$130,085	129%	127	86	148%	1,351,887	1,243,764	109%	194.74	178.85	109%
Roof Top Unit Efficiency	$36,422	$51,885	70%	0	20	0%	0	526,941	0%	0.00	69.43	0%
Advertising & Education	$24,615	$25,000	98%	76	100	76%	0	0	0%	0.00	0.00	0%
Compressed Air Audits	$5,839	$20,000	29%	1	4	25%	0	0	0%	0.00	0.00	0%
Financing	$15,336	$50,000	31%	0	5	0%	0	0	0%	0.00	0.00	0%
Implementation & Training	$37,134	$60,000	62%	507	250	203%	0	0	0%	0.00	0.00	0%
Total - Commercial	$4,292,249	$3,506,684	122%	2,739	2,380	115%	36,909,627	26,948,283	137%	7,679.49	7,022.06	109%
Other Projects												
Company-Owned Street & Area Lighting	$0	$1,303,846	0%	0	3,941	0%	0	2,382,518	0%	0.00	0.00	0%
Publicy-Owned Property Solar	$9,961	$114,860	9%	0	9	0%	0	107,250	0%	0.00	46.22	0%
Total - Other	$9,961	$1,418,706	1%	0	3,950	0%	0	2,489,768	0%	0.00	46.22	0%

Table 5
2017 CIP Program Status Report / CIP Tracker Recap
Financial Incentive Project -- 2017 Conservation Improvement Programs
Otter Tail Power Company

	2017 Expenditures			2017 Participation			2017 Energy Savings - kWh			2017 Coincident Demand Savings - kW		
	Actual	**Budget**	**% of Goal**	**Actual**	**Budget**	**% of Goal**	**Actual**	**Budget**	**% of Goal**	**Actual**	**Budget**	**% of Goal**
Program Development And Regulatory Requirements												
Planning - Regulatory Affairs	$182,220	$300,000	61%									
Research & Development	$120,845	$180,000	67%									
NGEA - Regulatory Assessments	$108,516	$110,000	99%									
PUC Assessments	$5,618	$20,000	28%									
Made in Minnesota Solar Energy Assesment	$114,860	$114,860	100%				87,069	78,000	112%			
Transmission & Distribution Cost Study	$32,067	$0	0%									
Total - Development & Regulatory Requirements	$564,126	$724,860	78%				87,069	78,000	112%			
Miscellaneous Projects												
Town Energy Challenge	$650	$0	0%									
PC Power Supply -- DISCONTINUED	$1,508	$0	0%	66	0	0%	17,691	0	0%	4.25	0.00	0%
Company CIP Projects	$710	$0	0%									
Accounting Adjustments	$15,021	$0	0%									
Total - Miscellaneous	$17,889	$0	0%	66	0	0%	17,691	0	0%	4.25	0.00	0%
Total - 2017 CIP Project Costs	$6,605,899	$7,519,350	88%	202,011	169,276	119%	52,584,236	41,908,098	125%	26,671.47	23,112.66	115%
CIP Tracker Carrying Costs	$102,386											
Total - 2017 CIP with Carrying Costs	$6,708,285	$7,519,350	89%	202,011	169,276	119%	52,584,236	41,908,098	125%	26,671.47	23,112.66	115%
Incentives - 2016 [Bonus]	$5,031,678											
CIP Recovery Mechanism	($5,999,462)											
Recovered Through Rates	($3,217,008)											
Prior Year Carry Forward Balance	$4,835,852											
Tracker Balance - Year End 2017	$7,359,345											

Table 6
2017 CIP PROGRAM STATUS REPORT / CIP TRACKER RECAP - COST PER KW / KWH
Financial Incentive Project -- 2017 Conservation Improvement Programs
Otter Tail Power Company

	2017 Expenditures		2017 Energy Savings - kWh		Cost per kWh		2017 Coincident Demand Savings - kW		Cost per kW	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Residential										
Residential Air Conditioning Control	$56,552	$85,000	81,466	131,611	$0.69	$0.65	1,942.63	3,138.38	$29	$27
Appliance Recycling	$92,291	$65,000	401,709	241,851	$0.23	$0.27	57.44	34.05	$1,607	$1,909
Energy Star Lighting	$336,283	$400,000	4,721,888	3,581,780	$0.07	$0.11	551.27	433.90	$610	$922
Electronically Commutated Motors	$38,789	$30,000	176,818	90,418	$0.22	$0.33	47.83	27.55	$811	$1,089
Energy Feedback Program	$304,434	$302,100	4,506,940	3,501,931	$0.07	$0.09	4,193.31	3,174.99	$73	$95
Residential Heat Pumps	$277,377	$275,000	2,398,200	1,855,208	$0.12	$0.15	185.08	165.46	$1,499	$1,662
Home Insulation	$25,016	$45,000	108,647	165,584	$0.23	$0.27	3.44	8.76	$7,280	$5,136
Home Transformer	$53,942	$87,000	440,788	540,788	$0.12	$0.16	81.03	100.10	$666	$869
School Kit Program	$105,290	$130,000	1,754,165	1,154,443	$0.06	$0.11	144.66	96.00	$728	$1,354
Smart Thermostats	$28,268	$50,000	141,951	312,221	$0.20	$0.16	2.25	1.55	$12,563	$32,258
Water Heater Store & Save	$23,267	$35,000	581,908	585,858	$0.04	$0.06	11,752.22	8,839.20	$2	$4
Total - Residential	$1,341,509	$1,504,100	15,314,480	12,161,693	$0.09	$0.12	18,961.16	16,019.94	$71	$94
Low-Income										
House Therapy	$161,155	$150,000	255,368	230,355	$0.63	$0.65	26.58	30.49	$6,064	$4,920
Total - Low-Income	$161,155	$150,000	255,368	230,355	$0.63	$0.65	26.58	30.49	$6,064	$4,920
Commercial										
Adjustable Speed Drives	$276,952	$379,000	4,655,659	5,412,302	$0.06	$0.07	553.40	707.23	$500	$536
Commercial Cool Savings	$13,743	$30,000	28,617	55,288	$0.48	$0.54	1,486.20	2,871.32	$9	$10
Commercial Design Assistance	$179,873	$345,160	838,600	1,417,341	$0.21	$0.24	211.47	388.26	$851	$889
Commercial Direct Install	$31,276	$28,740	250,702	361,594	$0.12	$0.08	30.46	51.10	$1,027	$562
Compressed Air Efficiency	$61,568	$139,514	200,657	1,026,919	$0.31	$0.14	38.47	147.20	$1,600	$948
Custom Effiency Grants	$264,124	$296,500	2,213,216	1,937,520	$0.12	$0.15	1,298.09	419.80	$203	$706
Commercial Heat Pumps	$614,339	$205,000	4,631,320	1,284,111	$0.13	$0.16	497.58	129.00	$1,235	$1,589
Commercial & Industrial Focused Efficiency	$210,877	$220,000	1,761,209	1,614,600	$0.12	$0.14	292.46	382.77	$721	$575
Lighting Retrofit	$1,894,087	$950,600	16,858,464	5,771,885	$0.11	$0.16	2,609.30	998.90	$726	$952
Lighting - New Construction	$131,459	$166,000	2,956,464	2,834,125	$0.04	$0.06	402.40	413.29	$327	$402
Midstream Commercial Kitchen Equipment	$61,936	$88,200	0	555,820	$0.00	$0.16	0.00	99.89	$0	$883
Motors	$105,500	$133,000	407,600	731,744	$0.26	$0.18	60.81	89.66	$1,735	$1,483
Recommissioning/Retrocommissioning	$159,012	$130,085	755,232	2,174,328	$0.21	$0.06	4.10	75.35	$38,743	$1,726
Refrigeration	$168,155	$51,885	1,351,887	1,243,764	$0.12	$0.04	194.74	178.85	$863	$290
Roof Top Unit Efficiency	$36,422	$25,000	0	526,941	$0.00	$0.05	0.00	69.43	$0	$360
Total - Commercial	$4,209,325	$3,188,684	36,909,627	26,948,283	$0.11	$0.12	7,679.49	7,022.06	$548	$454
Other Projects										
Company-Owned Street & Area Lighting	$0	$1,303,846	0	2,382,518	$0.00	$0.55	0.00	0.00	$0	$0
Publicy-Owned Property Solar	$9,961	$114,860	0	107,250	$0.00	$1.07	0.00	0.00	$0	$0
Total - Other	$9,961	$114,860	0	107,250	$0.00	$1.07	0.00	0.00	$0	$0
Total - Direct Impact	$5,721,950	$5,609,567	52,479,476	40,638,839	$0.11	$0.14	26,667.22	23,072.49	$215	$243
Miscellaneous Projects										
Town Energy Challenge - Inactive	$650	$0	0	0	$0.00	$0.00	0.00	0.00	$0	$0
PC Power Supply -- DISCONTINUED	$1,508	$0	17,691	0	$0.09	$0.00	4.25	0.00	$355	$0
Company CIP Projects	$710	$0	0	0	$0.00	$0.00	0.00	0.00	$0	$0
Accounting Adjustments	$15,021	$0	0	0	$0.00	$0.00	0.00	0.00	$0	$0
Total - Miscellaneous	$17,889	$0	17,691	0	$1.01	$0.00	4.25	0.00	$4,207	$0
Total - Indirect Impact	$866,060	$1,069,860	87,069	78,000	$9.95	$13.72	0.00	0.00	$0	$0
Total - 2017 CIP Project Costs	$6,605,899	$6,679,427	52,584,236	40,716,839	$0.13	$0.16	26,671.47	23,072.49	$248	$289

Appendix B- Other Evaluations

- **Bill Analyzer Evaluation Program Year 2017**
- **OPOWER 2017 Results Report**

123 E. 4th St, Cincinnati Ohio 45202

Final Memorandum

To: **Otter Tail Power Company**

From: **Ken Skinner, Integral Analytics**

Date: **March 1, 2018**

RE: **Impact Evaluation Results for the Bill Analyzer Program (Program Year 2017)**

This memo presents the final results from the billing analysis of Otter Tail Power Company's (Otter Tail's) Bill Analyzer energy efficiency program. This analysis relied upon a statistical analysis of actual customer billed electricity consumption before and after participation in the program to estimate the impact of the program. Table 1 presents the results of this billing analysis.

Table 1: Average Annual kWh Savings:

Participation Level	Savings (kWh/year)
Overall	648
Used Home Energy Center	450
Used the Bill History or Bill Analysis	221
Used CSR	825
Level 1	652
Level 2	555
Level 3	62[1]

For this impact evaluation, data are available both across households (i.e., cross-sectional) and over time (i.e., time-series). With this type of data, known as "panel" data, it becomes possible to control,

[1] The saving impact of 62 kWh / year achieved via using level 3 is not statistically significant at a confidence level of 95%, i.e. there is 95% chance that the impact could be anywhere from as low as not saving at all to as high as 100 kWh / year.

simultaneously, for differences across households as well as differences across periods in time through the use of a "fixed-effects" panel model specification. The fixed-effect refers to the model specification aspect that differences across homes that do not vary over the estimation period (such as square footage, heating system, etc.) can be explained, in large part, by customer-specific intercept terms that capture the net change in consumption due to the program, controlling for other factors that do change with time (e.g., the weather).

Because the consumption data in the panel model includes months before and after the installation of measures through the program, the period of program participation (or the participation window) may be defined specifically for each customer. This feature of the panel model allows for the pre-installation months of consumption to effectively act as controls for post-participation months. In addition, this model specification, unlike annual pre/post-participation models such as annual change models, does not require a full year of post-participation data. Per Otter Tail's request in this analysis a control group was used to explicitly control for any bias that might not have been captured in a fixed effect model with only participants.

We know the exact month of participation in the program for each participant, and are able to construct customer specific models that measure the change in usage consumption immediately before and after the date of program participation, controlling for weather and customer characteristics.

The fixed effects model can be viewed as a type of differencing model in which all characteristics of the home, which (1) are independent of time and (2) determine the level of energy consumption, are captured within the customer-specific constant terms. In other words, differences in customer characteristics that cause variation in the level of energy consumption, such as building size and structure, are captured by constant terms representing each unique household.

Algebraically, the fixed-effect panel data model is described as follows:

$$y_{it} = \alpha_i + \beta x_{it} + \varepsilon_{it},$$

where:

- y_{it} = energy consumption for home *i* during month *t*
- α_i = constant term for site *i*
- β = vector of coefficients
- x = vector of variables that represent factors causing changes in energy consumption for home *i* during month *t* (i.e., weather and participation) including a binary variable which tracks months of participation. This binary variable is defined as being 1 for all months since inception of program participation. It is defined as being 0 for all the control group members and for treatment group participants in any month before participation
- ε = error term for home *i* during month *t.*

With this specification, the only information necessary for estimation is those factors that vary month to month for each customer, and that will affect energy use, which effectively are weather conditions and

program participation. Other non-measurable factors can be captured through the use of monthly indicator variables (e.g., to capture the effect of potentially seasonal energy loads).

The effect of the program was estimated by including a variable which is equal to one for all months after the customer first logged into the Bill Analyzer website. For those control group members this variable is set to zero in all months. Thus the coefficient on this variable is the savings associated with any general interaction with the website. In order to determine if there is any savings associated with going deeper in the tools available on the website, additional models were estimated that determined the savings from using various features on the site, as well as the highest level achieved by the customer.[2] Finally, in order to account for differences in billing days, billing data was standardized according to calendar months.

Data

The statistical model used to determine the impact of Bill Analyzer incorporates monthly billing data from January 1, 2010 to December 2017 from participants in Minnesota, a control group of non-participating Otter Tail residential customers also in Minnesota, weather data (average monthly temperate) for the same period, other Otter Tail program participation, and information about each participant's use of Bill Analyzer (login date and tool used). Table 2 presents the number of households in the participant and non-participant group included in the model.

Table 2: Sample used for estimation.

	Participants	Non-participants
Original Sample size	2,479	743
Eliminated due to excessive missing or zero reads or extremely small reads in most months	207	60
Eliminated Dashboard (IBP) only customers[3]	0	0
Estimation Sample	2,272	683
Total Sample Size (5278)	3,222 homes	

The number of 2017 participants that used the Home Energy Center (HEC), CSR, or bill history or bill analysis (CCSS) tools or have completed Level 1, Level 2, or Level 3 are presented in Table 3. Since a customer can log in multiple times and use different combinations of the Bill Analyzer each time, the total across the different tools/levels will be greater than the number of individual users.

[2] The features used by the customer and the levels (1, 2, and 3) achieved were defined in the dataset obtained from Otter Tail Power for 2017.

[3] Dashboard viewers (those accounts that participated ONLY in IBP) are removed given they are not considered interactive.

Table 3: Bill Analyzer featured used.

	HEC	CSR	CCSS	Completed		
				Level 1	Level 2	Level 3
Number	287	2	1277	828	118	39
% of total	12%	<1%	56%	36%	5%	2%

Finally, table 4 presents that average annual kWh usage for both the participants and non-participants for 2008 to 2017.

Table 4: Average annual electricity usage (kWh), by year and group.

Year	Participants	Non-participants
2008	16,908	13,267
2009	17,309	13,628
2010	16,330	12,929
2011	17,589	14,158
2012	15,696	12,834
2013	17,459	14,461
2014	18,398	14,309
2015	14,682	11,831
2016	12,797	11,166
2017	14,397	10,687

Estimation

The estimated models are presented in Table 5-7.[4]

Table 5: Estimated Overall Savings – dependent variable is monthly kWh usage, using usage from January 2008 through December 2017 (savings are negative).

Independent Variable	Coefficient (kWh/month)	t-value
Logged into the Bill Analyzer website	-53.99	-5.07
Sample Size	105,743 obs	
R-Squared	56%	

[4] The models include weather terms, monthly indicator terms and other Otter Tail program participation in addition to the variables presented in these tables. These variables were not included in order make interpretation clearer. The full models are included in the Appendix.

Table 6: Estimated Savings by Tool Used – dependent variable is monthly kWh usage, using usage from January 2008 through December 2017 (savings are negative)

Independent Variable	Coefficient (kWh/month)	t-value
Used Home Energy Center	-37.51	-2.19
Used the Bill History or Bill Analysis	-18.49	-1.20
Used CSR	-68.78	-1.72
Sample Size	105,743 obs	
R-Squared	57%	

Table 7: Estimated Savings by Achieved Level – dependent variable is daily kWh usage, using usage from January 2008 through December 2017 (savings are negative) of those who actively participated in 2017 (savings are negative).

Independent Variable	Coefficient (kWh/month)	t-value
Reached Level 1	-54.34	-3.97
Reached Level 2	-46.25	-2.11
Reached Level 3[5]	-5.19	-0.12[6]
Sample Size	105,743 obs	
R-Squared	56%	

These estimated models show that the Bill Analyzer program does induce energy conservation by participants, with a statistically significant average annual savings of 648 kWh / year. Customers who used CSR achieved the highest savings level of 825 kWh / year. Customer who used the bill history or bill analysis tools achieved some savings of 221 kWh per year.

Customers who reached level 1 show statistical significant savings of 652 kWh per year. Customers reached level 2 in total saved 555 kWh per year (the saving estimate is the total saving of level 2). Getting to level 3 results in annual savings not statistically significant, i.e. the saving is not significantly different from zero; also note that level 3 customers achieved no savings in 2017. The saving estimates associated with various levels are consistent with results from last year because they fall within the confidence interval of program year 2017.

[5] The coefficient estimates are total saving of each level. Therefore, the total saving of level 1 customers is 652 kWh per year (54.34*12). The total saving of level 2 customers is 555 kWh per year (46.25*12). Level 3 with t-value = -0.12 which means the saving estimate of 5.19 is not significantly different from 0).

[6] Not significant at 95% confidence level

Conclusion

In summary, these results show that the Bill Analyzer program does induce energy conservation by participants, with a statistically significant average annual savings of 648 kWh. Customers who used HEC achieved the highest savings level of 450 kWh. Customer who used the bill history or bill analysis tools achieved some savings (221 kWh). Customers who used CSR saved 825 kWh.

Customers who reached level 1 show statistical significant savings of 652 kWh per year. Customers reached level 2 in total saved 555 kWh per year (the saving estimate is the total saving of level 2). Getting to level 3 does not lift savings from level 2.

Based on the estimated results and their statistical significance, the most appropriate savings estimate for the Bill Analyzer program is the overall estimate of 648 kWh / year per participant based on the sample of 2,272 participating accounts.

APPENDIX:

Estimated Overall Model

Dependent Variable: billed_kwh

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3302	76494577043	23166134.78	38.99	<.0001
Error	102441	608688665495941	84.61894		
Corrected Total	105743	137363443592			

R-Square	Coeff Var	Root MSE	billed_kwh Mean
0.556877	65.97776	770.8337	1168.323

Source	DF	Type I SS	Mean Square	F Value	Pr > F
ConcatID	3022	171976380352	22345973	37.61	<.0001
sum_cd*sum_hd*monthi	78	4447851333	57023735	95.97	<.0001
overall_BA	1	31003103	31003103	52.18	<.0001
Opower	1	18535127	18535127	31.19	<.0001
OtherPrograms	1	20807129	20807129	35.02	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
sum_cd*sum_hd*monthi	7844	44048678	56974983	95.89	<.0001
overall_BA	1	15298805	15298805	25.75	<.0001
Opower	1	14650048	14650048	24.66	<.0001
OtherPrograms	1	20807129	20807129	35.02	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > |t|
sum_cd*sum_hd*monthi 17563	-0.0153757	0.03846909	-0.40	0.6894
sum_cd*sum_hd*monthi 17623	-0.2100484	0.03678019	-5.71	<.0001
sum_cd*sum_hd*monthi 17653	-0.1872009	0.01241463	-15.08	<.0001
sum_cd*sum_hd*monthi 17684	-0.0920566	0.00717405	-12.83	<.0001
sum_cd*sum_hd*monthi 17714	-0.1967785	0.02067593	-9.52	<.0001
sum_cd*sum_hd*monthi 17745	-0.0512446	0.00313448	-16.35	<.0001
sum_cd*sum_hd*monthi 17776	-0.0855085	0.00573645	-14.91	<.0001
sum_cd*sum_hd*monthi 17806	-0.2965629	0.22297913	-1.33	0.1835
sum_cd*sum_hd*monthi 17957	-0.0717817	0.03925671	-1.83	0.0675
sum_cd*sum_hd*monthi 17988	-0.0853786	0.00926113	-9.22	<.0001
sum_cd*sum_hd*monthi 18018	-0.0673178	0.00477625	-14.09	<.0001
sum_cd*sum_hd*monthi 18049	-0.0661242	0.00507765	-13.02	<.0001
sum_cd*sum_hd*monthi 18079	-0.1527176	0.00908602	-16.81	<.0001
sum_cd*sum_hd*monthi 18110	-0.1220389	0.00691022	-17.66	<.0001
sum_cd*sum_hd*monthi 18141	-0.0332864	0.00342525	-9.72	<.0001
sum_cd*sum_hd*monthi 18322	-0.2729683	0.07862142	-3.47	0.0005
sum_cd*sum_hd*monthi 18353	-0.0445528	0.00669492	-6.65	<.0001
sum_cd*sum_hd*monthi 18383	-0.0627776	0.00431090	-14.56	<.0001
sum_cd*sum_hd*monthi 18414	-0.0957076	0.00808840	-11.83	<.0001
sum_cd*sum_hd*monthi 18444	-0.0855208	0.01184968	-7.22	<.0001
sum_cd*sum_hd*monthi 18475	-0.0339309	0.00243370	-13.94	<.0001

sum_cd*sum_hd*monthi	18506	-0.2345599	0.01668414	-14.06<.0001
sum_cd*sum_hd*monthi	18536	-0.1414275	0.01963961	-7.20<.0001
sum_cd*sum_hd*monthi	18718	-0.1959107	0.02059247	-9.51<.0001
sum_cd*sum_hd*monthi	18748	-0.0481666	0.00353090	-13.64<.0001
sum_cd*sum_hd*monthi	18779	-0.0580716	0.00426023	-13.63<.0001
sum_cd*sum_hd*monthi	18809	-0.1375212	0.01685416	-8.16<.0001
sum_cd*sum_hd*monthi	18840	-0.0555472	0.00357796	-15.52<.0001
sum_cd*sum_hd*monthi	18871	-0.0593809	0.00329751	-18.01<.0001
sum_cd*sum_hd*monthi	18901	-0.0526069	0.00587550	-8.95<.0001
sum_cd*sum_hd*monthi	18993	1.1507639	0.38128335	3.020.0025
sum_cd*sum_hd*monthi	19024	-0.0130151	0.01241956	-1.050.2947
sum_cd*sum_hd*monthi	19053	-0.1337507	0.01696626	-7.88<.0001
sum_cd*sum_hd*monthi	19084	-0.0676456	0.00565930	-11.95<.0001
sum_cd*sum_hd*monthi	19114	-0.0462266	0.00261747	-17.66<.0001
sum_cd*sum_hd*monthi	19145	-0.0789091	0.00762235	-10.35<.0001
sum_cd*sum_hd*monthi	19175	-0.0601271	0.00622691	-9.66<.0001
sum_cd*sum_hd*monthi	19206	-0.0398292	0.00257167	-15.49<.0001
sum_cd*sum_hd*monthi	19237	-0.1277517	0.00832435	-15.35<.0001
sum_cd*sum_hd*monthi	19418	-0.1337037	0.26640718	-0.500.6158
sum_cd*sum_hd*monthi	19449	-0.0435758	0.00613816	-7.10<.0001
sum_cd*sum_hd*monthi	19479	-0.0686550	0.00447484	-15.34<.0001
sum_cd*sum_hd*monthi	19510	-0.0687177	0.00700160	-9.81<.0001
sum_cd*sum_hd*monthi	19540	-0.0578728	0.00431422	-13.41<.0001
sum_cd*sum_hd*monthi	19571	-0.0267251	0.00207790	-12.86<.0001
sum_cd*sum_hd*monthi	19602	-0.0860042	0.00517661	-16.61<.0001
sum_cd*sum_hd*monthi	19632	-0.1175959	0.03508212	-3.350.0008
sum_cd*sum_hd*monthi	19783	-0.0080059	0.01625782	-0.490.6224
sum_cd*sum_hd*monthi	19814	-0.0246559	0.00397365	-6.20<.0001
sum_cd*sum_hd*monthi	19844	-0.0330871	0.00233099	-14.19<.0001
sum_cd*sum_hd*monthi	19875	-0.0680317	0.00471023	-14.44<.0001
sum_cd*sum_hd*monthi	19905	-0.1287286	0.00839532	-15.33<.0001
sum_cd*sum_hd*monthi	19936	-0.0526723	0.00352276	-14.95<.0001
sum_cd*sum_hd*monthi	19967	-0.0601021	0.00385146	-15.61<.0001
sum_cd*sum_hd*monthi	20148	-0.1069640	0.24016644	-0.450.6560
sum_cd*sum_hd*monthi	20179	-0.2990524	0.02476943	-12.07<.0001
sum_cd*sum_hd*monthi	20209	-0.0581920	0.00383855	-15.16<.0001
sum_cd*sum_hd*monthi	20240	-0.0482220	0.00390757	-12.34<.0001
sum_cd*sum_hd*monthi	20270	-0.0443429	0.00448354	-9.89<.0001
sum_cd*sum_hd*monthi	20301	-0.0332575	0.00202279	-16.44<.0001
sum_cd*sum_hd*monthi	20332	-0.0415403	0.00237572	-17.49<.0001
sum_cd*sum_hd*monthi	20362	-0.1441597	0.01332130	-10.82<.0001
sum_cd*sum_hd*monthi	20514	-0.0523707	0.03728316	-1.400.1601
sum_cd*sum_hd*monthi	20545	-0.0863894	0.00586203	-14.74<.0001
sum_cd*sum_hd*monthi	20575	-0.0599533	0.00364412	-16.45<.0001
sum_cd*sum_hd*monthi	20606	-0.0974159	0.00618020	-15.76<.0001
sum_cd*sum_hd*monthi	20636	-0.1247455	0.01341380	-9.30<.0001

sum_cd*sum_hd*monthi	20667	-0.0855202	0.00503903	-16.97<.0001
sum_cd*sum_hd*monthi	20698	-0.1410543	0.00953757	-14.79<.0001
sum_cd*sum_hd*monthi	20728	-0.5818161	0.18273114	-3.180.0015
sum_cd*sum_hd*monthi	20879	-0.3652665	0.13974595	-2.610.0090
sum_cd*sum_hd*monthi	20910	-0.0824008	0.01026899	-8.02<.0001
sum_cd*sum_hd*monthi	20940	-0.0294399	0.00222365	-13.24<.0001
sum_cd*sum_hd*monthi	20971	-0.0518010	0.00415469	-12.47<.0001
sum_cd*sum_hd*monthi	21001	-0.1379563	0.01128374	-12.23<.0001
sum_cd*sum_hd*monthi	21032	-0.0663852	0.00481867	-13.78<.0001
sum_cd*sum_hd*monthi	21063	-0.0669623	0.00430171	-15.57<.0001
sum_cd*sum_hd*monthi	21093	-0.0536059	0.03086676	-1.740.0824
overall_BA		-53.997206	10.64150952	-5.07<.0001
Opower		-35.4517389	7.13967944	-4.97<.0001
OtherPrograms		-114.646378	319.37380671	-5.92<.0001

Estimated Tool Use Model

Dependent Variable: billed_kwh

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3304	764903189522315082 2.927		38.96	<.0001
Error	102439	608731246395942 37.78677			
Corrected Total	105743	137363443592			

R-Square	Coeff Var	Root MSE	billed_kwh Mean
0.556846	65.98072	770.8682	1168.323

Source	DF	Type I SS	Mean Square	F Value	Pr > F
ConcatID	322	171976380352	22345973	37.60	<.0001
sum_cd*sum_hd*monthi	78	4447851333	57023735	95.96	<.0001
Used_HEC	1	19451398	19451398	32.73	<.0001
used_BA	1	4329424	4329424	7.29	0.0070
used_CSR	1	1807137	1807137	3.04	0.0812
Opower	1	20828265	20828265	35.05	<.0001
OtherPrograms	1	19671043	19671043	33.10	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
sum_cd*sum_hd*monthi	78	4448413141	57030938	95.97	<.0001
Used_HEC	1	2861451	2861451	4.82	0.0282
used_BA	1	853843	853843	1.44	0.2306
used_CSR	1	1755257	1755257	2.95	0.0857
Opower	1	17256852	17256852	29.04	<.0001
OtherPrograms	1	19671043	19671043	33.10	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > |t|
sum_cd*sum_hd*monthi 17563	-0.0153185	0.03847081	-0.40	0.6905
sum_cd*sum_hd*monthi 17623	-0.2096360	0.03678188	-5.70	<.0001
sum_cd*sum_hd*monthi 17653	-0.1868247	0.01241486	-15.05	<.0001
sum_cd*sum_hd*monthi 17684	-0.0920481	0.00717576	-12.83	<.0001
sum_cd*sum_hd*monthi 17714	-0.1961349	0.02067611	-9.49	<.0001
sum_cd*sum_hd*monthi 17745	-0.0511954	0.00313483	-16.33	<.0001
sum_cd*sum_hd*monthi 17776	-0.0854672	0.00573735	-14.90	<.0001
sum_cd*sum_hd*monthi 17806	-0.2943580	0.22299039	-1.32	0.1868
sum_cd*sum_hd*monthi 17957	-0.0716456	0.03925869	-1.82	0.0680
sum_cd*sum_hd*monthi 17988	-0.0852796	0.00926188	-9.21	<.0001
sum_cd*sum_hd*monthi 18018	-0.0672077	0.00477651	-14.07	<.0001
sum_cd*sum_hd*monthi 18049	-0.0661740	0.00507874	-13.03	<.0001
sum_cd*sum_hd*monthi 18079	-0.1525703	0.00908668	-16.79	<.0001
sum_cd*sum_hd*monthi 18110	-0.1221451	0.00691136	-17.67	<.0001
sum_cd*sum_hd*monthi 18141	-0.0333031	0.00342556	-9.72	<.0001
sum_cd*sum_hd*monthi 18322	-0.2732330	0.07862684	-3.48	0.0005
sum_cd*sum_hd*monthi 18353	-0.0445465	0.00669524	-6.65	<.0001
sum_cd*sum_hd*monthi 18383	-0.0629289	0.00431100	-14.60	<.0001
sum_cd*sum_hd*monthi 18414	-0.0958980	0.00808867	-11.86	<.0001

sum_cd*sum_hd*monthi	18444	-0.0854966	0.01185030	-7.21<.0001
sum_cd*sum_hd*monthi	18475	-0.0339881	0.00243375	-13.97<.0001
sum_cd*sum_hd*monthi	18506	-0.2350869	0.01668418	-14.09<.0001
sum_cd*sum_hd*monthi	18536	-0.1420736	0.01964007	-7.23<.0001
sum_cd*sum_hd*monthi	18718	-0.1967491	0.02059202	-9.55<.0001
sum_cd*sum_hd*monthi	18748	-0.0483150	0.00353074	-13.68<.0001
sum_cd*sum_hd*monthi	18779	-0.0583005	0.00425984	-13.69<.0001
sum_cd*sum_hd*monthi	18809	-0.1373389	0.01685543	-8.15<.0001
sum_cd*sum_hd*monthi	18840	-0.0555054	0.00357827	-15.51<.0001
sum_cd*sum_hd*monthi	18871	-0.0593508	0.00329780	-18.00<.0001
sum_cd*sum_hd*monthi	18901	-0.0526129	0.00587583	-8.95<.0001
sum_cd*sum_hd*monthi	18993	1.1511847	0.38130532	3.020.0025
sum_cd*sum_hd*monthi	19024	-0.0129258	0.01242009	-1.040.2980
sum_cd*sum_hd*monthi	19053	-0.1336769	0.01696724	-7.88<.0001
sum_cd*sum_hd*monthi	19084	-0.0676528	0.00565971	-11.95<.0001
sum_cd*sum_hd*monthi	19114	-0.0462358	0.00261766	-17.66<.0001
sum_cd*sum_hd*monthi	19145	-0.0788428	0.00762268	-10.34<.0001
sum_cd*sum_hd*monthi	19175	-0.0601104	0.00622724	-9.65<.0001
sum_cd*sum_hd*monthi	19206	-0.0398545	0.00257193	-15.50<.0001
sum_cd*sum_hd*monthi	19237	-0.1279022	0.00832572	-15.36<.0001
sum_cd*sum_hd*monthi	19418	-0.1320948	0.26641892	-0.500.6200
sum_cd*sum_hd*monthi	19449	-0.0435257	0.00613858	-7.09<.0001
sum_cd*sum_hd*monthi	19479	-0.0685689	0.00447525	-15.32<.0001
sum_cd*sum_hd*monthi	19510	-0.0687272	0.00700204	-9.82<.0001
sum_cd*sum_hd*monthi	19540	-0.0578188	0.00431458	-13.40<.0001
sum_cd*sum_hd*monthi	19571	-0.0266789	0.00207809	-12.84<.0001
sum_cd*sum_hd*monthi	19602	-0.0858464	0.00517696	-16.58<.0001
sum_cd*sum_hd*monthi	19632	-0.1174438	0.03508426	-3.350.0008
sum_cd*sum_hd*monthi	19783	-0.0079675	0.01625861	-0.490.6241
sum_cd*sum_hd*monthi	19814	-0.0246257	0.00397394	-6.20<.0001
sum_cd*sum_hd*monthi	19844	-0.0329984	0.00233118	-14.16<.0001
sum_cd*sum_hd*monthi	19875	-0.0678871	0.00471069	-14.41<.0001
sum_cd*sum_hd*monthi	19905	-0.1284681	0.00839606	-15.30<.0001
sum_cd*sum_hd*monthi	19936	-0.0526153	0.00352299	-14.93<.0001
sum_cd*sum_hd*monthi	19967	-0.0600204	0.00385167	-15.58<.0001
sum_cd*sum_hd*monthi	20148	-0.1026572	0.24017788	-0.430.6691
sum_cd*sum_hd*monthi	20179	-0.2992813	0.02477074	-12.08<.0001
sum_cd*sum_hd*monthi	20209	-0.0581151	0.00383878	-15.14<.0001
sum_cd*sum_hd*monthi	20240	-0.0481591	0.00390778	-12.32<.0001
sum_cd*sum_hd*monthi	20270	-0.0442152	0.00448377	-9.86<.0001
sum_cd*sum_hd*monthi	20301	-0.0331845	0.00202293	-16.40<.0001
sum_cd*sum_hd*monthi	20332	-0.0414304	0.00237585	-17.44<.0001
sum_cd*sum_hd*monthi	20362	-0.1435920	0.01332177	-10.78<.0001
sum_cd*sum_hd*monthi	20514	-0.0530753	0.03728460	-1.420.1546
sum_cd*sum_hd*monthi	20545	-0.0865354	0.00586215	-14.76<.0001
sum_cd*sum_hd*monthi	20575	-0.0601301	0.00364399	-16.50<.0001

sum_cd*sum_hd*monthi	20606	-0.0977540	0.00617972	-15.82<.0001
sum_cd*sum_hd*monthi	20636	-0.1256402	0.01341138	-9.37<.0001
sum_cd*sum_hd*monthi	20667	-0.0859584	0.00503773	-17.06<.0001
sum_cd*sum_hd*monthi	20698	-0.1418564	0.00953556	-14.88<.0001
sum_cd*sum_hd*monthi	20728	-0.5868908	0.18273241	-3.210.0013
sum_cd*sum_hd*monthi	20879	-0.3634684	0.13975491	-2.600.0093
sum_cd*sum_hd*monthi	20910	-0.0825322	0.01026957	-8.04<.0001
sum_cd*sum_hd*monthi	20940	-0.0294976	0.00222382	-13.26<.0001
sum_cd*sum_hd*monthi	20971	-0.0519370	0.00415483	-12.50<.0001
sum_cd*sum_hd*monthi	21001	-0.1385411	0.01128301	-12.28<.0001
sum_cd*sum_hd*monthi	21032	-0.0667476	0.00481768	-13.85<.0001
sum_cd*sum_hd*monthi	21063	-0.0673180	0.00430038	-15.65<.0001
sum_cd*sum_hd*monthi	21093	-0.0555034	0.03086318	-1.800.0721
Used_HEC		-37.512215	817.09462830	-2.190.0282
used_BA		-18.486753	015.42239571	-1.200.2306
used_CSR		-68.786006	140.02301911	-1.720.0857
Opower		-38.2942936	7.10613432	-5.39<.0001
OtherPrograms		-111.937031	219.45540246	-5.75<.0001

Estimated Achieved Level Model

Dependent Variable: billed_kwh

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3304	7649016278523150775.661		38.96	<.0001
Error	102439	608732808075942 39.31126			
Corrected Total	105743	137363443592			

R-Square	Coeff Var	Root MSE	billed_kwh Mean
0.556845	65.98080	770.8692	1168.323

Source	DF	Type I SS	Mean Square	F Value	Pr > F
ConcatID	32217	1976380352	22345973	37.60	<.0001
sum_cd*sum_hd*monthi	78	4447851333	57023735	95.96	<.0001
l1	1	15249891	15249891	25.66	<.0001
l2	1	7599345	7599345	12.79	0.0003
l3	1	890728	890728	1.50	0.2208
Opower	1	21726006	21726006	36.56	<.0001
OtherPrograms	1	20465130	20465130	34.44	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
sum_cd*sum_hd*monthi	78	4446598867	57007678	95.93	<.0001
l1	1	9355696	9355696	15.74	<.0001
l2	1	2655173	2655173	4.47	0.0345
l3	1	8943	8943	0.02	0.9024
Opower	1	17833420	17833420	30.01	<.0001
OtherPrograms	1	20465130	20465130	34.44	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > |t|
sum_cd*sum_hd*monthi 17563	-0.0153789	0.03847086	-0.40	0.6893
sum_cd*sum_hd*monthi 17623	-0.2097251	0.03678201	-5.70	<.0001
sum_cd*sum_hd*monthi 17653	-0.1864707	0.01241373	-15.02	<.0001
sum_cd*sum_hd*monthi 17684	-0.0915859	0.00717434	-12.77	<.0001
sum_cd*sum_hd*monthi 17714	-0.1958761	0.02067485	-9.47	<.0001
sum_cd*sum_hd*monthi 17745	-0.0510411	0.00313438	-16.28	<.0001
sum_cd*sum_hd*monthi 17776	-0.0851789	0.00573633	-14.85	<.0001
sum_cd*sum_hd*monthi 17806	-0.2953251	0.22299025	-1.32	0.1854
sum_cd*sum_hd*monthi 17957	-0.0717592	0.03925877	-1.83	0.0676
sum_cd*sum_hd*monthi 17988	-0.0852008	0.00926144	-9.20	<.0001
sum_cd*sum_hd*monthi 18018	-0.0671474	0.00477634	-14.06	<.0001
sum_cd*sum_hd*monthi 18049	-0.0658896	0.00507808	-12.98	<.0001
sum_cd*sum_hd*monthi 18079	-0.1523456	0.00908617	-16.77	<.0001
sum_cd*sum_hd*monthi 18110	-0.1218958	0.00691110	-17.64	<.0001
sum_cd*sum_hd*monthi 18141	-0.0332154	0.00342559	-9.70	<.0001
sum_cd*sum_hd*monthi 18322	-0.2735656	0.07862691	-3.48	0.0005
sum_cd*sum_hd*monthi 18353	-0.0446087	0.00669531	-6.66	<.0001

sum_cd*sum_hd*monthi	18383	-0.0628436	0.00431107	-14.58<.0001
sum_cd*sum_hd*monthi	18414	-0.0957917	0.00808882	-11.84<.0001
sum_cd*sum_hd*monthi	18444	-0.0855869	0.01185032	-7.22<.0001
sum_cd*sum_hd*monthi	18475	-0.0339697	0.00243379	-13.96<.0001
sum_cd*sum_hd*monthi	18506	-0.2350903	0.01668429	-14.09<.0001
sum_cd*sum_hd*monthi	18536	-0.1417913	0.01964017	-7.22<.0001
sum_cd*sum_hd*monthi	18718	-0.1968807	0.02059221	-9.56<.0001
sum_cd*sum_hd*monthi	18748	-0.0483983	0.00353058	-13.71<.0001
sum_cd*sum_hd*monthi	18779	-0.0583596	0.00425972	-13.70<.0001
sum_cd*sum_hd*monthi	18809	-0.1372618	0.01685560	-8.14<.0001
sum_cd*sum_hd*monthi	18840	-0.0555102	0.00357831	-15.51<.0001
sum_cd*sum_hd*monthi	18871	-0.0593637	0.00329782	-18.00<.0001
sum_cd*sum_hd*monthi	18901	-0.0526119	0.00587590	-8.95<.0001
sum_cd*sum_hd*monthi	18993	1.1415391	0.38129659	2.990.0028
sum_cd*sum_hd*monthi	19024	-0.0130943	0.01242030	-1.050.2918
sum_cd*sum_hd*monthi	19053	-0.1338881	0.01696725	-7.89<.0001
sum_cd*sum_hd*monthi	19084	-0.0676896	0.00565967	-11.96<.0001
sum_cd*sum_hd*monthi	19114	-0.0462618	0.00261765	-17.67<.0001
sum_cd*sum_hd*monthi	19145	-0.0789150	0.00762282	-10.35<.0001
sum_cd*sum_hd*monthi	19175	-0.0602064	0.00622743	-9.67<.0001
sum_cd*sum_hd*monthi	19206	-0.0398626	0.00257186	-15.50<.0001
sum_cd*sum_hd*monthi	19237	-0.1278634	0.00832516	-15.36<.0001
sum_cd*sum_hd*monthi	19418	-0.1320928	0.26641943	-0.500.6200
sum_cd*sum_hd*monthi	19449	-0.0436154	0.00613864	-7.11<.0001
sum_cd*sum_hd*monthi	19479	-0.0687103	0.00447534	-15.35<.0001
sum_cd*sum_hd*monthi	19510	-0.0689128	0.00700206	-9.84<.0001
sum_cd*sum_hd*monthi	19540	-0.0579740	0.00431488	-13.44<.0001
sum_cd*sum_hd*monthi	19571	-0.0267548	0.00207818	-12.87<.0001
sum_cd*sum_hd*monthi	19602	-0.0860403	0.00517717	-16.62<.0001
sum_cd*sum_hd*monthi	19632	-0.1183352	0.03508412	-3.370.0007
sum_cd*sum_hd*monthi	19783	-0.0079799	0.01625862	-0.490.6236
sum_cd*sum_hd*monthi	19814	-0.0246776	0.00397385	-6.21<.0001
sum_cd*sum_hd*monthi	19844	-0.0331045	0.00233133	-14.20<.0001
sum_cd*sum_hd*monthi	19875	-0.0680501	0.00471084	-14.45<.0001
sum_cd*sum_hd*monthi	19905	-0.1287260	0.00839608	-15.33<.0001
sum_cd*sum_hd*monthi	19936	-0.0526743	0.00352303	-14.95<.0001
sum_cd*sum_hd*monthi	19967	-0.0600786	0.00385178	-15.60<.0001
sum_cd*sum_hd*monthi	20148	-0.1054414	0.24018429	-0.440.6607
sum_cd*sum_hd*monthi	20179	-0.2989615	0.02477062	-12.07<.0001
sum_cd*sum_hd*monthi	20209	-0.0581767	0.00383884	-15.15<.0001
sum_cd*sum_hd*monthi	20240	-0.0481918	0.00390780	-12.33<.0001
sum_cd*sum_hd*monthi	20270	-0.0442681	0.00448373	-9.87<.0001
sum_cd*sum_hd*monthi	20301	-0.0332084	0.00202292	-16.42<.0001
sum_cd*sum_hd*monthi	20332	-0.0414743	0.00237583	-17.46<.0001
sum_cd*sum_hd*monthi	20362	-0.1437544	0.01332167	-10.79<.0001
sum_cd*sum_hd*monthi	20514	-0.0521497	0.03728579	-1.400.1619

sum_cd*sum_hd*monthi	20545	-0.0863968	0.00586243	-14.74<.0001
sum_cd*sum_hd*monthi	20575	-0.0600472	0.00364426	-16.48<.0001
sum_cd*sum_hd*monthi	20606	-0.0976717	0.00618014	-15.80<.0001
sum_cd*sum_hd*monthi	20636	-0.1252989	0.01341379	-9.34<.0001
sum_cd*sum_hd*monthi	20667	-0.0857603	0.00503899	-17.02<.0001
sum_cd*sum_hd*monthi	20698	-0.1415511	0.00953683	-14.84<.0001
sum_cd*sum_hd*monthi	20728	-0.5840708	0.18273948	-3.200.0014
sum_cd*sum_hd*monthi	20879	-0.3644340	0.13975306	-2.610.0091
sum_cd*sum_hd*monthi	20910	-0.0824692	0.01026973	-8.03<.0001
sum_cd*sum_hd*monthi	20940	-0.0294888	0.00222386	-13.26<.0001
sum_cd*sum_hd*monthi	20971	-0.0519526	0.00415487	-12.50<.0001
sum_cd*sum_hd*monthi	21001	-0.1384660	0.01128376	-12.27<.0001
sum_cd*sum_hd*monthi	21032	-0.0666872	0.00481835	-13.84<.0001
sum_cd*sum_hd*monthi	21063	-0.0672674	0.00430102	-15.64<.0001
sum_cd*sum_hd*monthi	21093	-0.0551908	0.03086404	-1.790.0737
I1		-54.336915	613.69423036	-3.97<.0001
I2		-46.246346	821.87820705	-2.110.0345
I3		-5.192332	842.32443920	-0.120.9024
Opower		-38.8588033	7.09337292	-5.48<.0001
OtherPrograms		-114.134729	519.44872987	-5.87<.0001

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Otter Tail Home Energy Reports Program: 2017 Results Report

Section 1: Program Overview

In June 2011, Otter Tail Power Company (Otter Tail) and Opower launched the Home Energy Reports pilot, a behavioral program designed to boost customer engagement and reduce residential energy consumption. Households selected for the program received a series of personalized Home Energy Reports designed to motivate and educate recipients to take actions to improve the energy efficiency of their homes.

- 30,000 residential customers were originally selected to receive reports at varying frequencies as part of the treatment population, of which 28,841 received reports. Targeted households were all located within Otter Tail's Minnesota service territory. These participants began receiving reports in June 2011 and are referred to as the June 2011 wave in this document.
    - A statistically equivalent group of approximately 5,000 households was randomly assigned to serve as a control population; these households did not receive reports.
    - Both samples were randomly selected from the same population to ensure unbiased measurement and verification of program results. The average annual electricity usage of the treatment and control populations was alike between 12,000-13,000 kWh.
    - As part of the territory-wide expansion in August 2015, mentioned below in this section, the control group associated with the June 2011 wave was disbanded. Customers originally preserved for the control group became eligible for conversion to the treatment group. The savings measurement methodology is described in greater detail in Section 2.

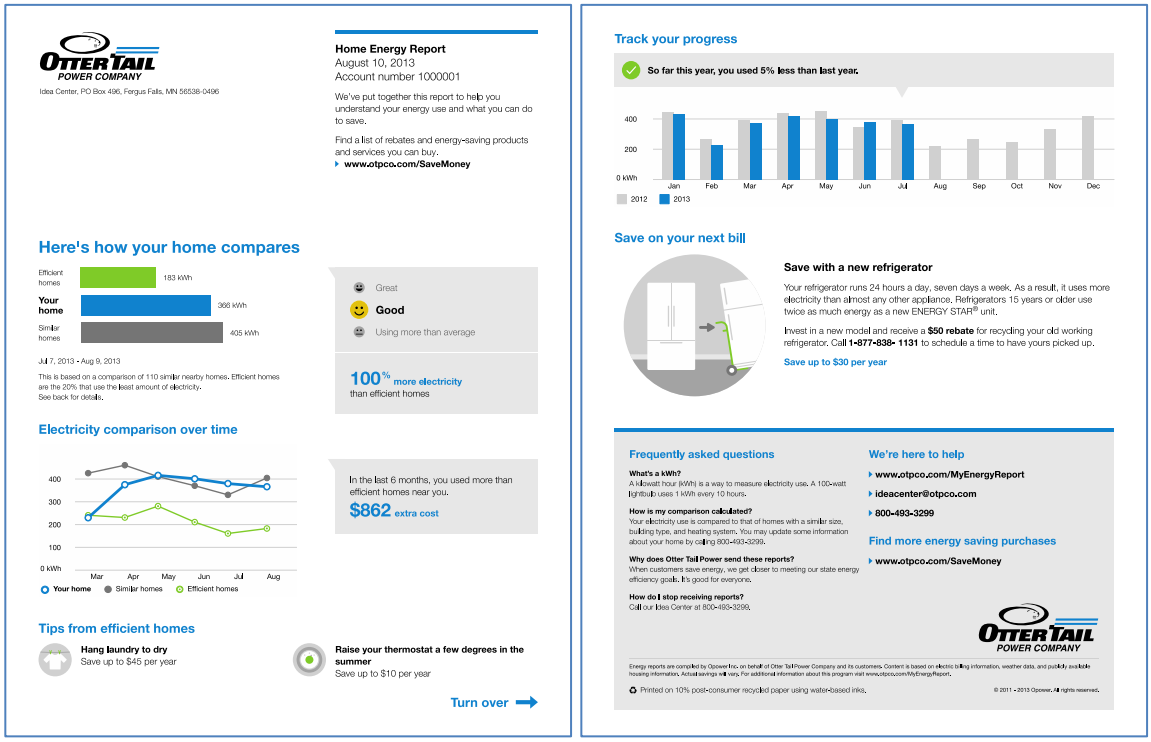
- Annually in 2012, 2013, and 2014, additional residential customers in Otter Tail's Minnesota service territory were added to the program as a refill to offset attrition (primarily from utility account turnover) and return the program to its original size. In August 2015, the control group was discontinued and approximately 9,500 residential customers, including those from the control group established with the 2011 wave, were added to the program as an expansion to serve as many eligible customers as possible.
    - Because the size of the annual refill groups was too small to maintain an independent control group, the program impact for each of these refill groups was measured utilizing the Modeled Savings Protocol approved by the Minnesota Department of Energy Resources (MN DER, formerly Office of Energy Security) in 2010. This method is discussed in more detail in Section 2.
    - An update to the Modeled Savings Protocol was submitted for approval to the MN DER with a request to apply the revised methodology to all waves of the program in 2016. The revised methodology is described in more detail in Section 2.

- In January 2017, the program size was reduced to a random 28,000 households (with over selection to plan for attrition and eligibility). Of these, 27,443 received reports.

Home Energy Reports, pictured in Figure 1, contain various personalized components designed to motivate and educate customers on energy efficiency actions. Report components include:

- Comparisons of recent energy use to a group of comparable 'similar homes'; this section includes both normative and injunctive messages designed to motivate action.
- Comparison of recent energy use to historical energy use, tracking household improvement over time.
- Targeted energy efficiency advice; specific tips are selected based on the home's energy use pattern, housing characteristics, and household demographics.
- Dynamic modules to promote programs and include seasonal information.
- An informative Frequently Asked Questions section.

Figure 1: Example of Otter Tail Home Energy Report (Front & Back)



In 2017, a total of 27,443 customers received reports. 31,293 customers remained active at the end of 2017. Of these recipients, 16,115 were in the original 2011 pilot wave; 2,384 in the 2012 wave; 2,084 in the 2013 wave; 1,546 in the 2014 wave; 6,332 in the 2015 wave; and 2,832 in the 2016 wave.

Cumulatively, 27 customers chose to opt out of the program in 2017, which corresponds to an opt-out rate of 0.098 percent for the year. The 2017 opt-out rate compares favorably to opt-out rates between 1-3 percent at other Minnesota utilities and is lower than the Opower overall average. In the same timeframe, 3,787 participants closed their electric accounts with Otter Tail, effectively removing them from the program.

Depending on when these events occurred, these customers may have received fewer than four reports in 2017 but are included as participants.

Figure 2: 2017 Account Closures & Opt-Outs by Wave

Month	Account Closures	Opt-Outs
June 2011 Wave	1,167	16
October 2012 Wave	286	1
July 2013 Wave	242	0
July 2014 Wave	221	2
August 2015 Wave	972	7
July 2016 Wave	899	1
2016 Total	**3,787**	**27**

Section 2: Savings Calculation Methodology

This section describes the criteria used to define the population eligible to receive Home Energy Reports, the methodology originally used to assign homes to treatment and control groups, the methodology for assigning homes to certain customer segments, and the measurement and verification techniques used to derive program savings.

Opower integrates data from a variety of sources to ensure the Home Energy Reports are personalized, accurate, and meaningful for all recipients. These data integration efforts also allow for detailed analysis of energy savings results that enable the optimization of feature design and targeting of specific energy efficiency messages. The data used for the various analyses presented herein were collected from three primary sources:

1. *Consumption data:* Otter Tail provides Opower with weekly updates of monthly consumption data for all households in the program, including historical consumption information.

2. *Parcel data:* Opower received, to the extent available from a third-party vendor, data about household parcels, including home size, age and value, heating and cooling type, as well as pool and hot tub data. These data elements are static with the exception of square footage, heating and cooling type, and pool and hot tub data, which may be updated at the customer's request.

3. *Demographic data:* Opower received, to the extent available from a third-party vendor, demographic data about participants, including household income, number of occupants, age of occupant(s), and an owner/renter indicator. These fields were used to recommend customized energy efficiency tips to customers by using relevant demographic targeting. Household size may be updated at the customer's request.

The primary measure of success for the Home Energy Reports program is the difference between the average energy consumption of homes in the treatment group and homes in the control group. Because of the statistical homogeneity of these two groups, any difference in their respective energy consumption from June 2011 (program start) to August 2015 (end of randomized controlled trial (RCT)) can be attributed to the Home Energy Reports.

The analysis of the Home Energy Reports program relies upon a fixed-effects regression model. The rationale for using a regression model to interpret the results of the 2011 wave are threefold: 1) the model eliminates variability due to other factors and allows for tighter error bars around the estimate of report impact; 2) in order to isolate the impact of the Home Energy Reports on energy use, it is appropriate to control for slight differences in the housing and demographic characteristics present in the treatment and control population; and 3) the model makes the search for population segments with better or worse than average impact much more manageable. This statistical methodology is standard procedure for the analysis of controlled experiments and is a well-accepted practice within the energy efficiency program measurement and verification community. This was the statistical methodology used to measure results for the initial wave of 30,000 households up until the expansion to territory-wide deployment in August 2015.

2.1 Modeled Savings Methodology

Without the benefit of a control group, the Modeled Savings Methodology was applied to measure the impact of the Home Energy Reports program in the 2012, 2013, 2014, 2015, and 2016 waves. This approach was approved by the MN DER in October 2010. This protocol aimed to leverage Opower expertise from ongoing programs in Minnesota with treatment and control populations, thus offering better safeguards to control for weather and other conditions specific to the state. With the Otter Tail program, savings associated with Otter Tail's 2012, 2013, 2014, 2015, and 2016 waves have been modeled using RCT-measured results from Otter Tail's own 2011 wave.

2.2 RCT Disbanded

As of August 2015, the control group associated with the 2011 pilot wave was converted to recipient status and began receiving reports as participants in the program. Measuring savings for the 2011 wave via a RCT became no longer possible. Therefore, Opower began reporting all savings for the program under the Modeled Savings Protocol. The Modeled Savings Protocol states that:

> "Larger utilities in Minnesota (greater than 15,000 customers) could also have the option of deploying the Opower platform to the entire service territory. Should this case arise, Opower proposes that this protocol also be extended to larger utilities that have a minimum of two years of experimental data from a program administered by Opower. In this case, the model should be based only on results for that particular client, not a sampling of clients across the state."

Otter Tail's Opower program had over four years of measured savings, meeting the approved threshold. Therefore, consistent with the recommendations of the Modeled Savings Protocol, Opower is able to rely on Otter Tail's own results to inform the model for calculating savings going forward.

2.3 Update to the *Modeled Savings Methodology*

In 2016, updates were made to the Modeled Savings Methodology to improve the accuracy of the reporting. These changes include:

- Establishing the relationship between the monthly savings rate and the cumulative number of print reports received per person in the wave up to that month.
- Applying the forecasted savings rate in a given month to the usage of the modeled wave.
- Adapting the algorithm to apply to rolling enrollment waves.

This methodology for measuring savings in territory-wide deployments, described in more detail below, has also been used successfully at Rochester Public Utilities in Minnesota and Fort Collins Utilities in Colorado.

Otter Tail received approval from the MN DER on October 7, 2016, to apply a revised Modeled Savings Methodology to calculate energy savings.

2.2.1 Regression Model & Modeled Savings Methodology

The regression model of program results includes regressors for heating and cooling degree days, baseline usage, home square footage, age of the home, and a treatment variable interacted with an indicator of whether the billing period is pre-treatment or post-treatment. Opower then scores the model based on the coefficients for treatment times post-deployment, baseline usage, home square footage, and age of the home.

Output is a function that describes energy savings as a function of observable household or customer characteristics. The final form of the model is determined based on the statistical significance of the candidate variables. A simplified equation using square footage and age of the customer's home, the number of occupants, the baseline usage in the pre-treatment period, and an indicator of whether the customer owns or rents their home is given below:

$$Savings = b0 + b1(sqft) + b2(age) + b3(\#\ of\ occupants) + b\ 4(baseline\ usage) + b5(owner)$$

Model output is the result of a similar equation, depending on the statistically significant variables.

The average of the 'scored' savings is the predicted per household savings for each customer in the utility. Multiplying this score by the number of customers yields the total savings over the time period in question.

Opower recognizes that because this methodology does not employ experimental design, it may be prudent to adjust the savings percentage accordingly. The resolved solution is to cap the savings calculated through this protocol at the maximum measured savings across the experimentally designed programs in Minnesota.

Section 3: Program Energy Savings

The Home Energy Reports program demonstrated a clear and significant reduction in residential energy consumption. Gross total savings for the program in 2017 amounted to 11,246 MWh. Over the course of 2017, participants saved at a rate of 2.58 percent. A month-by-month breakdown of savings by deployment wave is shown below in Figure 3.

Figure 3: 2017 Monthly Electric Savings Impact Broken Down by Deployment Wave

Month	2011 Wave Savings (MWh)	2012 Wave Savings (MWh)	2013 Wave Savings (MWh)	2014 Wave Savings (MWh)	2015 Wave Savings (MWh)	2016 Wave Savings (MWh)
January 2017	843	115	91	67	210	78
February 2017	683	91	72	53	165	62
March 2017	666	88	71	52	161	59
April 2017	510	68	54	40	125	47
May 2017	437	62	50	36	116	43
June 2017	428	63	51	37	119	45
July 2017	486	71	58	42	135	50
August 2017	439	64	52	38	121	45
September 2017	393	57	46	34	108	41
October 2017	463	66	53	40	126	47
November 2017	583	84	67	51	158	60
December 2017	699	102	81	60	195	75
2017 Total	**6,627**	**932**	**746**	**550**	**1,740**	**651**

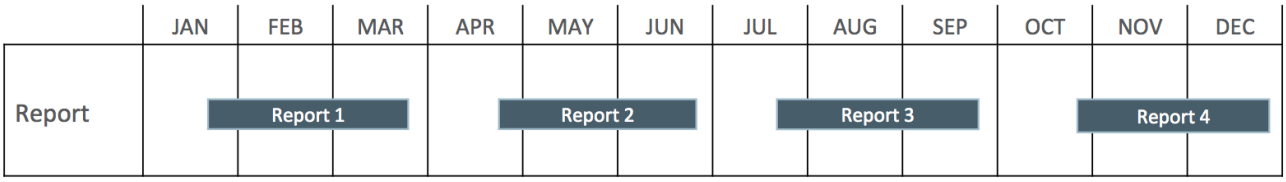
Opower Home Energy Report programs increase customer participation in other utility energy efficiency programs. The evidence for this comes from Opower's RCTs. Treatment customers who receive reports participate in utility energy efficiency programs at higher rates than do control customers. The most recent Opower meta-analyses of the impact on program participation show a 15 percent lift across all utility energy efficiency programs. The increase in participation impacts savings for the reports program in the form of jointly attributable savings. Opower will remove these jointly attributable savings, to avoid the risk of 'double-counting'.

With a control group no longer available for program participation measurement, Opower has applied a value measured by Xcel Energy in its Minnesota program evaluation, entitled *Verification of Savings from Xcel Energy Minnesota's Print Energy Feedback Pilot Project* from March 2014, performed by the Center for Energy and Environment. The value is an average of the jointly attributable percentage savings from 2010-2012, which equates to 1.4 percent of program annual savings. Gross savings in 2017 will be reduced by 157 MWh to account for these jointly attributable savings. Net annual savings for the program in 2017 is therefore adjusted to 11,089 MWh, which is equal to an average of 404.07 kilowatt-hours in energy savings per participant household.

Section 4: Program Design

Figure 4 displays the frequency with which Home Energy Reports were sent to program participants in 2017. Participants received, on average, four reports per year on a bi-monthly cadence. Customers generally received reports in February, May, August, and November.

Figure 4: Program Design for 2017



Appendix C- Project Information Sheets

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Residential Air Conditioning Control					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$41,250	$28,167	$41,250		$41,250	
Administration	$17,060	$9,353	$17,625		$18,190	
Evaluation, Measurement & Verification	$3,000	$220	$3,000		$3,000	
Advertising & Promotion	$20,000	$18,813	$20,000		$20,000	
Incentives	$0	$0	$0		$0	
Other	$3,690	$0	$4,125		$4,560	
Total Utility Costs	$85,000	$56,552	$86,000		$87,000	
Total Participants	4,244	2,627	4,389		4,534	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	122,270	75,684	126,447		130,625	
Annual kWh Savings at Generator	132,384	81,944	136,907	0	141,430	0
Cost per Annual kWh Saved at Generator	$0.6421	$0.6901	$0.6282	$0.0000	$0.6151	$0.0000
Peak kW Savings at Meter	2,915.628	1,804.749	3,015.243		3,114.858	
Peak kW Savings at Generator	3,156.808	1,954.037	3,264.663	0.000	3,372.518	0.000
Cost per Peak kW Saved at Generator	$26.93	$28.94	$26.34	$0.00	$25.80	$0.00
Utility Ratio	4.00	3.72	3.89		4.22	
Utility NPV	$254,622	$153,671	$248,696		$280,305	
Ratepayer Ratio	3.50	3.22	3.41		3.67	
Ratepayer NPV	$242,591	$144,966	$236,413		$267,109	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$12,587	$9,107	$12,850		$13,806	
Societal Ratio	4.02	3.74	3.91		4.24	
Societal NPV	$256,485	$154,825	$250,553		$281,807	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Appliance Recycling					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$33,500	$47,826	$33,500		$33,500	
Administration	$4,000	$10,791	$4,000		$4,000	
Evaluation, Measurement & Verification	$2,000	$189	$2,000		$2,000	
Advertising & Promotion	$14,000	$14,086	$14,000		$14,000	
Incentives	$11,500	$19,400	$11,500		$11,500	
Other	$0	$0	$0		$0	
Total Utility Costs	$65,000	$92,291	$65,000		$65,000	
Total Participants	230	388	230		230	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	224,685	373,197	224,685		224,685	
Annual kWh Savings at Generator	243,271	404,068	243,271	0	243,271	0
Cost per Annual kWh Saved at Generator	$0.2672	$0.2284	$0.2672	$0.0000	$0.2672	$0.0000
Peak kW Savings at Meter	31.633	53.364	31.633		31.633	
Peak kW Savings at Generator	34.250	57.778	34.250	0.000	34.250	0.000
Cost per Peak kW Saved at Generator	$1,897.83	$1,597.34	$1,897.83	$0.00	$1,897.83	$0.00
Utility Ratio	1.33	1.62	1.42		1.50	
Utility NPV	$21,292	$57,119	$27,169		$32,657	
Ratepayer Ratio	0.41	0.42	0.44		0.44	
Ratepayer NPV	($126,088)	($209,329)	($118,897)		($126,788)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$199,707	$348,740	$197,955		$216,465	
Societal Ratio	2.35	2.88	2.45		2.53	
Societal NPV	$72,209	$136,950	$77,354		$82,079	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Energy Star Lighting					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$95,000	$67,100	$103,000		$108,000	
Administration	$8,000	$25,507	$7,000		$9,000	
Evaluation, Measurement & Verification	$2,000	$569	$2,000		$2,000	
Advertising & Promotion	$10,000	$4,529	$10,000		$10,000	
Incentives	$285,000	$238,578	$273,000		$231,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$400,000	$336,283	$395,000		$360,000	
Total Participants	100,000	129,587	105,000		110,000	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	3,327,555	4,386,741	3,493,933		3,660,310	
Annual kWh Savings at Generator	3,602,810	4,749,611	3,782,950	0	3,963,091	0
Cost per Annual kWh Saved at Generator	$0.1110	$0.0708	$0.1044	$0.0000	$0.0908	$0.0000
Peak kW Savings at Meter	403.104	512.142	423.259		443.414	
Peak kW Savings at Generator	436.449	554.506	458.271	0.000	480.094	0.000
Cost per Peak kW Saved at Generator	$916.49	$606.46	$861.94	$0.00	$749.85	$0.00
Utility Ratio	4.93	8.12	5.48		6.57	
Utility NPV	$1,570,109	$2,394,722	$1,769,428		$2,004,322	
Ratepayer Ratio	0.53	0.53	0.57		0.51	
Ratepayer NPV	($1,736,127)	($2,470,129)	($1,666,299)		($2,232,950)	
Participant Ratio	10.65	11.19	13.11		15.64	
Participant NPV	$4,824,720	$6,572,104	$5,086,586		$6,440,410	
Societal Ratio	5.50	5.88	6.75		6.93	
Societal NPV	$2,767,543	$3,651,063	$3,115,910		$3,372,404	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Electroncially Commutated Motors					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$10,000	$6,922	$10,000		$10,000	
Administration	$5,000	$6,516	$5,000		$5,000	
Evaluation, Measurement & Verification	$1,000	$189	$1,000		$1,000	
Advertising & Promotion	$2,000	$2,462	$2,000		$2,000	
Incentives	$12,000	$22,700	$12,000		$12,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$30,000	$38,789	$30,000		$30,000	
Total Participants	120	227	120		120	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	84,000	164,268	84,000		84,000	
Annual kWh Savings at Generator	90,948	177,856	90,948	0	90,948	0
Cost per Annual kWh Saved at Generator	$0.3299	$0.2181	$0.3299	$0.0000	$0.3299	$0.0000
Peak kW Savings at Meter	25.596	44.434	25.596		25.596	
Peak kW Savings at Generator	27.713	48.109	27.713	0.000	27.713	0.000
Cost per Peak kW Saved at Generator	$1,082.51	$806.26	$1,082.51	$0.00	$1,082.51	$0.00
Utility Ratio	2.98	4.59	3.11		3.24	
Utility NPV	$59,523	$139,291	$63,433		$67,168	
Ratepayer Ratio	0.71	0.70	0.74		0.66	
Ratepayer NPV	($36,972)	($75,101)	($32,031)		($50,754)	
Participant Ratio	5.90	6.39	5.83		7.49	
Participant NPV	$146,873	$305,630	$144,984		$194,554	
Societal Ratio	3.47	4.21	3.58		3.68	
Societal NPV	$118,678	$234,083	$123,738		$128,621	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Energy Feedback					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$265,100	$297,759	$265,100		$265,100	
Administration	$7,000	$2,220	$7,000		$7,000	
Evaluation, Measurement & Verification	$18,000	$1,972	$18,000		$18,000	
Advertising & Promotion	$12,000	$2,483	$12,000		$12,000	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$302,100	$304,434	$302,100		$302,100	
Total Participants	30,500	29,715	30,500		30,500	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	3,253,373	4,187,050	3,086,680		3,086,680	
Annual kWh Savings at Generator	3,522,492	4,533,402	3,342,010	0	3,342,010	0
Cost per Annual kWh Saved at Generator	$0.0858	$0.0672	$0.0904	$0.0000	$0.0904	$0.0000
Peak kW Savings at Meter	2,949.633	3,895.683	2,781.633		2,781.633	
Peak kW Savings at Generator	3,193.626	4,217.933	3,011.729	0.000	3,011.729	0.000
Cost per Peak kW Saved at Generator	$94.59	$72.18	$100.31	$0.00	$100.31	$0.00
Utility Ratio	2.19	2.84	2.26		2.47	
Utility NPV	$360,208	$559,722	$379,157		$444,523	
Ratepayer Ratio	0.52	0.53	0.56		0.60	
Ratepayer NPV	($616,447)	($764,502)	($535,617)		($506,842)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$1,021,777	$1,385,404	$957,036		$995,318	
Societal Ratio	2.68	3.47	2.71		2.82	
Societal NPV	$508,970	$751,177	$515,114		$550,976	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Residential Heat Pumps					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$82,000	$48,627	$82,000		$82,000	
Administration	$20,000	$5,255	$20,000		$20,000	
Evaluation, Measurement & Verification	$4,000	$312	$4,000		$4,000	
Advertising & Promotion	$16,000	$7,051	$16,000		$16,000	
Incentives	$153,000	$216,132	$153,000		$153,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$275,000	$277,377	$275,000		$275,000	
Total Participants	102	150	102		102	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	1,723,530	2,227,982	1,742,076		1,742,076	
Annual kWh Savings at Generator	1,866,100	2,412,280	1,886,180	0	1,886,180	0
Cost per Annual kWh Saved at Generator	$0.1474	$0.1150	$0.1458	$0.0000	$0.1458	$0.0000
Peak kW Savings at Meter	153.714	171.943	153.714		153.714	
Peak kW Savings at Generator	166.429	186.166	166.429	0.000	166.429	0.000
Cost per Peak kW Saved at Generator	$1,652.35	$1,489.95	$1,652.35	$0.00	$1,652.35	$0.00
Utility Ratio	3.76	5.40	3.92		4.08	
Utility NPV	$757,982	$1,220,748	$802,454		$845,680	
Ratepayer Ratio	0.47	0.51	0.50		0.44	
Ratepayer NPV	($1,159,234)	($1,431,390)	($1,094,499)		($1,454,427)	
Participant Ratio	5.31	4.74	5.25		6.59	
Participant NPV	$2,667,508	$3,360,582	$2,632,103		$3,458,116	
Societal Ratio	2.61	2.68	2.69		2.76	
Societal NPV	$1,194,615	$1,614,343	$1,250,058		$1,305,600	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Home Insulation					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$11,000	$4,126	$11,000		$11,000	
Administration	$3,000	$4,640	$3,000		$3,000	
Evaluation, Measurement & Verification	$1,500	$125	$1,500		$1,500	
Advertising & Promotion	$10,000	$9,440	$10,000		$10,000	
Incentives	$19,500	$6,685	$19,500		$19,500	
Other	$0	$0	$0		$0	
Total Utility Costs	$45,000	$25,016	$45,000		$45,000	
Total Participants	40	20	40		40	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	153,832	100,936	153,832		153,832	
Annual kWh Savings at Generator	166,556	109,285	166,556	0	166,556	0
Cost per Annual kWh Saved at Generator	$0.2702	$0.2289	$0.2702	$0.0000	$0.2702	$0.0000
Peak kW Savings at Meter	8.140	3.193	8.140		8.140	
Peak kW Savings at Generator	8.813	3.457	8.813	0.000	8.813	0.000
Cost per Peak kW Saved at Generator	$5,105.90	$7,237.25	$5,105.90	$0.00	$5,105.90	$0.00
Utility Ratio	1.94	2.33	2.02		2.09	
Utility NPV	$42,132	$33,362	$45,731		$49,258	
Ratepayer Ratio	0.39	0.37	0.41		0.36	
Ratepayer NPV	($134,582)	($98,373)	($129,094)		($166,696)	
Participant Ratio	4.29	5.82	4.24		5.45	
Participant NPV	$246,437	$178,404	$242,978		$333,756	
Societal Ratio	1.73	1.96	1.78		1.83	
Societal NPV	$73,615	$53,028	$78,561		$83,600	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Home Transformer					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$64,200	$4,540	$64,200		$64,200	
Administration	$5,000	$10,029	$5,000		$5,000	
Evaluation, Measurement & Verification	$2,000	$127	$2,000		$2,000	
Advertising & Promotion	$5,000	$2,427	$5,000		$5,000	
Incentives	$10,800	$36,819	$10,800		$10,800	
Other	$0	$0	$0		$0	
Total Utility Costs	$87,000	$53,942	$87,000		$87,000	
Total Participants	100	88	100		100	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	502,405	409,502	502,405		502,405	
Annual kWh Savings at Generator	543,964	443,376	543,964	0	543,964	0
Cost per Annual kWh Saved at Generator	$0.1599	$0.1217	$0.1599	$0.0000	$0.1599	$0.0000
Peak kW Savings at Meter	92.991	75.278	92.991		92.991	
Peak kW Savings at Generator	100.683	81.505	100.683	0.000	100.683	0.000
Cost per Peak kW Saved at Generator	$864.10	$661.83	$864.10	$0.00	$864.10	$0.00
Utility Ratio	4.39	8.71	4.59		4.78	
Utility NPV	$295,178	$415,626	$312,252		$328,640	
Ratepayer Ratio	0.63	0.88	0.67		0.59	
Ratepayer NPV	($223,210)	($64,783)	($200,721)		($293,301)	
Participant Ratio	96.64	inf.	95.57		121.59	
Participant NPV	$851,186	$734,814	$841,660		$1,073,218	
Societal Ratio	8.27	13.49	8.52		8.76	
Societal NPV	$618,357	$673,646	$639,541		$660,045	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	School Kits					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$46,000	$22,844	$46,000		$46,000	
Administration	$10,000	$11,157	$10,000		$10,000	
Evaluation, Measurement & Verification	$2,000	$377	$2,000		$2,000	
Advertising & Promotion	$4,000	$0	$4,000		$4,000	
Incentives	$68,000	$70,911	$68,000		$68,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$130,000	$105,290	$130,000		$130,000	
Total Participants	1,000	1,511	1,000		1,000	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	1,072,503	1,629,659	1,072,503		1,072,503	
Annual kWh Savings at Generator	1,161,221	1,764,464	1,161,221	0	1,161,221	0
Cost per Annual kWh Saved at Generator	$0.1120	$0.0597	$0.1120	$0.0000	$0.1120	$0.0000
Peak kW Savings at Meter	89.186	134.388	89.186		89.186	
Peak kW Savings at Generator	96.564	145.505	96.564	0.000	96.564	0.000
Cost per Peak kW Saved at Generator	$1,346.26	$723.62	$1,346.26	$0.00	$1,346.26	$0.00
Utility Ratio	3.40	15.70	3.58		3.75	
Utility NPV	$311,705	$1,548,279	$334,765		$356,982	
Ratepayer Ratio	0.47	1.13	0.50		0.47	
Ratepayer NPV	($500,484)	$195,776	($469,744)		($553,303)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$1,197,583	$1,800,893	$1,186,210		$1,360,360	
Societal Ratio	11.46	20.15	11.81		12.14	
Societal NPV	$648,373	$2,016,343	$670,441		$690,490	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Smart Thermostats					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$10,000	$9,057	$10,000		$10,000	
Administration	$13,000	$2,937	$13,000		$13,000	
Evaluation, Measurement & Verification	$1,500	$126	$1,500		$1,500	
Advertising & Promotion	$10,500	$9,773	$10,500		$10,500	
Incentives	$15,000	$6,376	$15,000		$15,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$50,000	$28,268	$50,000		$50,000	
Total Participants	140	50	140		140	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	290,060	131,876	290,060		290,060	
Annual kWh Savings at Generator	314,054	142,785	314,054	0	314,054	0
Cost per Annual kWh Saved at Generator	$0.1592	$0.1980	$0.1592	$0.0000	$0.1592	$0.0000
Peak kW Savings at Meter	1.440	2.090	1.440		1.440	
Peak kW Savings at Generator	1.559	2.263	1.559	0.000	1.559	0.000
Cost per Peak kW Saved at Generator	$32,069.44	$12,490.01	$32,069.44	$0.00	$32,069.44	$0.00
Utility Ratio	1.72	1.53	1.80		1.88	
Utility NPV	$36,081	$14,856	$40,214		$44,147	
Ratepayer Ratio	0.31	1.53	0.33		0.32	
Ratepayer NPV	($187,407)	$14,856	($181,144)		($202,924)	
Participant Ratio	18.36	0.79	18.19		20.43	
Participant NPV	$298,642	($1,735)	$295,625		$334,255	
Societal Ratio	2.67	2.21	2.72		2.78	
Societal NPV	$87,201	$36,230	$90,026		$92,770	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Water Heater Store & Save					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$10,000	$9,675	$10,000		$10,000	
Administration	$5,000	$0	$5,000		$5,000	
Evaluation, Measurement & Verification	$5,000	$191	$5,000		$5,000	
Advertising & Promotion	$15,000	$13,401	$15,000		$15,000	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$35,000	$23,267	$35,000		$35,000	
Total Participants	16,165	16,056	16,165		16,165	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	544,276	540,606	544,276		544,276	
Annual kWh Savings at Generator	589,298	585,324	589,298	0	589,298	0
Cost per Annual kWh Saved at Generator	$0.0594	$0.0398	$0.0594	$0.0000	$0.0594	$0.0000
Peak kW Savings at Meter	8,211.820	10,918.080	8,211.820		8,211.820	
Peak kW Savings at Generator	8,891.100	11,821.221	8,891.100	0.000	8,891.100	0.000
Cost per Peak kW Saved at Generator	$3.94	$1.97	$3.94	$0.00	$3.94	$0.00
Utility Ratio	27.50	54.75	26.22		27.88	
Utility NPV	$927,499	$1,250,552	$882,849		$940,776	
Ratepayer Ratio	10.76	15.87	10.34		10.73	
Ratepayer NPV	$873,036	$1,193,560	$829,081		$884,858	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$56,980	$59,625	$56,252		$58,502	
Societal Ratio	27.74	55.10	26.45		28.06	
Societal NPV	$935,795	$1,258,792	$890,840		$947,033	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Residential Advertising and Education					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$160,000	$66,172	$160,000		$160,000	
Administration	$6,000	$2,777	$6,000		$6,000	
Evaluation, Measurement & Verification	$4,000	$0	$4,000		$4,000	
Advertising & Promotion	$0	$120,369	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$5,000	$0	$5,000		$5,000	
Total Utility Costs	$175,000	$189,318	$175,000		$175,000	
Total Participants	10,000	18,629	10,000		10,000	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($175,000)	($189,318)	($175,000)		($175,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($175,000)	($189,318)	($175,000)		($175,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($175,000)	($189,318)	($175,000)		($175,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Residential Implementation and Training					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$37,600	$24,850	$37,600		$37,600	
Administration	$1,200	$2,172	$1,200		$1,200	
Evaluation, Measurement & Verification	$1,200	$2,046	$1,200		$1,200	
Advertising & Promotion	$0	$624	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$40,000	$29,692	$40,000		$40,000	
Total Participants	175	36	175		175	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	31%	31%	31%		31%	
Budget % (% of Total Utility Costs)	31%	31%	31%		31%	
Renter Participation*						
Participants % (% of Total Participants)	21%	21%	21%		21%	
Budget % (% of Total Utility Costs)	21%	21%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($40,000)	($29,692)	($40,000)		($40,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($40,000)	($29,692)	($40,000)		($40,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($40,000)	($29,692)	($40,000)		($40,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Low-Income House Therapy					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$12,657	$0		$0	
Administration	$16,510	$14,097	$16,510		$16,510	
Evaluation, Measurement & Verification	$1,500	$377	$1,500		$1,500	
Advertising & Promotion	$1,500	$1,709	$1,500		$1,500	
Incentives	$130,490	$132,314	$130,490		$130,490	
Other	$0	$0	$0		$0	
Total Utility Costs	$150,000	$161,155	$150,000		$150,000	
Total Participants	130	122	130		130	
% of Spending by Customer Segments						
Residential	100%	100%	100%		100%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)	100%	100%	100%		100%	
Budget % (% of Total Utility Costs)	100%	100%	100%		100%	
Renter Participation*						
Participants % (% of Total Participants)	21%	9%	21%		21%	
Budget % (% of Total Utility Costs)	21%	9%	21%		21%	
Energy Savings						
Annual kWh Savings at Meter	214,005	237,243	214,005		214,005	
Annual kWh Savings at Generator	231,707	256,868	231,707	0	231,707	0
Cost per Annual kWh Saved at Generator	$0.6474	$0.6274	$0.6474	$0.0000	$0.6474	$0.0000
Peak kW Savings at Meter	22.713	24.690	22.713		22.713	
Peak kW Savings at Generator	24.591	26.732	24.591	0.000	24.591	0.000
Cost per Peak kW Saved at Generator	$6,099.72	$6,028.48	$6,099.72	$0.00	$6,099.72	$0.00
Utility Ratio	0.68	0.66	0.71		0.75	
Utility NPV	($47,556)	($54,149)	($42,891)		($38,061)	
Ratepayer Ratio	0.31	0.30	0.32		0.31	
Ratepayer NPV	($230,022)	($245,346)	($223,441)		($247,869)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$400,970	$391,408	$397,973		$451,991	
Societal Ratio	8.89	5.70	9.14		9.40	
Societal NPV	$153,889	$135,635	$158,784		$163,816	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Adjustable Speed Drives					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$45,000	$24,585	$45,000		$45,000	
Administration	$7,500	$5,505	$7,500		$7,500	
Evaluation, Measurement & Verification	$1,000	$720	$1,000		$1,000	
Advertising & Promotion	$5,000	$3,359	$5,000		$5,000	
Incentives	$319,000	$242,784	$319,000		$319,000	
Other	$1,500	$0	$1,500		$1,500	
Total Utility Costs	$379,000	$276,952	$379,000		$379,000	
Total Participants	152	122	152		152	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	30%	30%	30%		30%	
Industrial	70%	70%	70%		70%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	5,028,152	4,325,213	5,028,152		5,028,152	
Annual kWh Savings at Generator	5,444,079	4,682,993	5,444,079	0	5,444,079	0
Cost per Annual kWh Saved at Generator	$0.0696	$0.0591	$0.0696	$0.0000	$0.0696	$0.0000
Peak kW Savings at Meter	657.030	514.123	657.030		657.030	
Peak kW Savings at Generator	711.380	556.652	711.380	0.000	711.380	0.000
Cost per Peak kW Saved at Generator	$532.77	$497.53	$532.77	$0.00	$532.77	$0.00
Utility Ratio	7.57	9.18	7.93		8.27	
Utility NPV	$2,490,418	$2,264,862	$2,624,764		$2,754,026	
Ratepayer Ratio	0.76	0.76	0.81		0.73	
Ratepayer NPV	($886,886)	($814,695)	($717,691)		($1,180,840)	
Participant Ratio	5.52	4.64	5.47		6.35	
Participant NPV	$3,154,176	$2,718,068	$3,117,716		$3,737,497	
Societal Ratio	6.53	5.29	6.73		6.92	
Societal NPV	$4,195,390	$3,348,918	$4,343,069		$4,487,631	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Air Conditioning Control					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$14,350	$5,027	$14,435		$14,520	
Administration	$9,650	$1,898	$10,565		$11,480	
Evaluation, Measurement & Verification	$1,000	$189	$1,000		$1,000	
Advertising & Promotion	$5,000	$845	$5,000		$5,000	
Incentives	$0	$5,785	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$30,000	$13,743	$31,000		$32,000	
Total Participants	512	271	529		546	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	51,364	26,586	53,069		54,775	
Annual kWh Savings at Generator	55,613	28,785	57,459	0	59,306	0
Cost per Annual kWh Saved at Generator	$0.5394	$0.4774	$0.5395	$0.0000	$0.5396	$0.0000
Peak kW Savings at Meter	2,667.520	1,380.717	2,756.090		2,844.660	
Peak kW Savings at Generator	2,888.177	1,494.930	2,984.073	0.000	3,079.970	0.000
Cost per Peak kW Saved at Generator	$10.39	$9.19	$10.39	$0.00	$10.39	$0.00
Utility Ratio	10.58	11.95	11.75		12.08	
Utility NPV	$287,296	$150,490	$333,260		$354,494	
Ratepayer Ratio	6.34	4.64	7.08		7.16	
Ratepayer NPV	$267,231	$128,846	$312,794		$332,524	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$20,992	$28,430	$21,412		$22,984	
Societal Ratio	10.60	20.69	11.78		12.10	
Societal NPV	$288,079	$156,680	$334,039		$355,123	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Design Assistance					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$201,902	$72,760	$202,368		$201,826	
Administration	$7,500	$7,901	$7,500		$7,500	
Evaluation, Measurement & Verification	$500	$619	$500		$500	
Advertising & Promotion	$6,000	$1,654	$6,000		$6,000	
Incentives	$129,258	$96,940	$129,258		$129,258	
Other	$0	$0	$0		$0	
Total Utility Costs	$345,160	$179,873	$345,626		$345,084	
Total Participants	6	4	6		6	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	1,316,742	779,078	1,316,742		1,316,742	
Annual kWh Savings at Generator	1,425,663	843,523	1,425,663	0	1,425,663	0
Cost per Annual kWh Saved at Generator	$0.2421	$0.2132	$0.2424	$0.0000	$0.2421	$0.0000
Peak kW Savings at Meter	360.701	196.456	360.701		360.701	
Peak kW Savings at Generator	390.538	212.707	390.538	0.000	390.538	0.000
Cost per Peak kW Saved at Generator	$883.81	$845.64	$885.00	$0.00	$883.61	$0.00
Utility Ratio	3.84	4.31	4.00		4.17	
Utility NPV	$980,238	$596,169	$1,037,427		$1,093,155	
Ratepayer Ratio	0.78	0.84	0.82		0.72	
Ratepayer NPV	($372,689)	($150,118)	($301,039)		($560,195)	
Participant Ratio	0.53	1.72	0.41		0.42	
Participant NPV	($1,391,020)	$366,339	($2,225,617)		($2,580,366)	
Societal Ratio	0.79	2.27	0.64		0.56	
Societal NPV	($671,905)	$754,018	($1,416,887)		($2,027,920)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Direct Install					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$9,191	$16,784	$9,191		$9,191	
Administration	$2,000	$5,099	$2,000		$2,000	
Evaluation, Measurement & Verification	$1,500	$0	$1,500		$1,500	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$16,050	$9,394	$16,050		$16,050	
Other	$0	$0	$0		$0	
Total Utility Costs	$28,740	$31,276	$28,740		$28,740	
Total Participants	110	76	110		110	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	335,929	232,908	335,929		335,929	
Annual kWh Savings at Generator	363,717	252,174	363,717	0	363,717	0
Cost per Annual kWh Saved at Generator	$0.0790	$0.1240	$0.0790	$0.0000	$0.0790	$0.0000
Peak kW Savings at Meter	47.475	28.301	47.475		47.475	
Peak kW Savings at Generator	51.403	30.643	51.403	0.000	51.403	0.000
Cost per Peak kW Saved at Generator	$559.12	$1,020.69	$559.12	$0.00	$559.12	$0.00
Utility Ratio	2.02	1.63	2.16		2.28	
Utility NPV	$29,456	$19,637	$33,407		$36,683	
Ratepayer Ratio	0.45	0.46	0.49		0.49	
Ratepayer NPV	($70,108)	($59,744)	($65,678)		($68,062)	
Participant Ratio	inf.	10.42	inf.		inf.	
Participant NPV	$120,213	$83,572	$119,712		$125,634	
Societal Ratio	6.38	2.36	6.62		6.78	
Societal NPV	$68,228	$41,972	$71,353		$73,372	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Compressed Air Efficiency					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$21,500	$14,447	$21,500		$21,500	
Administration	$5,000	$3,617	$5,000		$5,000	
Evaluation, Measurement & Verification	$1,500	$0	$1,500		$1,500	
Advertising & Promotion	$5,000	$754	$5,000		$5,000	
Incentives	$106,900	$42,750	$106,900		$106,900	
Other	$0	$0	$0		$0	
Total Utility Costs	$139,900	$61,568	$139,900		$139,900	
Total Participants	23	10	23		23	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	50%	50%	50%		50%	
Industrial	50%	50%	50%		50%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	954,031	186,415	954,031		954,031	
Annual kWh Savings at Generator	1,032,948	201,835	1,032,948	0	1,032,948	0
Cost per Annual kWh Saved at Generator	$0.1354	$0.3050	$0.1354	$0.0000	$0.1354	$0.0000
Peak kW Savings at Meter	136.756	35.742	136.756		136.756	
Peak kW Savings at Generator	148.068	38.698	148.068	0.000	148.068	0.000
Cost per Peak kW Saved at Generator	$944.83	$1,590.97	$944.83	$0.00	$944.83	$0.00
Utility Ratio	2.95	2.16	3.11		3.27	
Utility NPV	$272,716	$71,298	$295,771		$317,640	
Ratepayer Ratio	0.67	0.66	0.71		0.68	
Ratepayer NPV	($204,719)	($69,243)	($177,031)		($214,970)	
Participant Ratio	3.74	1.74	3.71		4.09	
Participant NPV	$444,092	$80,534	$439,245		$501,816	
Societal Ratio	3.31	1.64	3.42		3.53	
Societal NPV	$451,482	$82,201	$473,256		$493,577	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Custom Efficiency Projects					
Status:	Existing					
Year:	**2017 Proposed**	**2017 Actual**	**2018 Proposed**	**2018 Actual**	**2019 Proposed**	**2019 Actual**
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$96,000	$98,995	$96,000		$96,000	
Administration	$2,500	$3,429	$2,500		$2,500	
Evaluation, Measurement & Verification	$12,000	$8,303	$12,000		$12,000	
Advertising & Promotion	$6,000	$2,752	$6,000		$6,000	
Incentives	$180,000	$150,646	$180,000		$180,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$296,500	$264,124	$296,500		$296,500	
Total Participants	30	44	30		30	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	1,800,000	2,056,128	1,800,000		1,800,000	
Annual kWh Savings at Generator	1,948,896	2,226,211	1,948,896	0	1,948,896	0
Cost per Annual kWh Saved at Generator	$0.1521	$0.1186	$0.1521	$0.0000	$0.1521	$0.0000
Peak kW Savings at Meter	390.000	1,205.957	390.000		390.000	
Peak kW Savings at Generator	422.261	1,305.713	422.261	0.000	422.261	0.000
Cost per Peak kW Saved at Generator	$702.17	$202.28	$702.17	$0.00	$702.17	$0.00
Utility Ratio	5.14	6.56	5.36		5.57	
Utility NPV	$1,227,208	$1,467,375	$1,293,186		$1,356,469	
Ratepayer Ratio	0.92	0.83	0.97		0.84	
Ratepayer NPV	($134,991)	($346,603)	($54,453)		($308,211)	
Participant Ratio	1.34	3.03	1.32		1.60	
Participant NPV	$405,132	$1,374,050	$389,899		$721,588	
Societal Ratio	2.20	3.34	2.27		2.33	
Societal NPV	$1,582,378	$1,842,852	$1,668,295		$1,752,137	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Heat Pump					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$63,000	$95,308	$63,000		$63,000	
Administration	$13,000	$10,300	$13,000		$13,000	
Evaluation, Measurement & Verification	$4,000	$612	$4,000		$4,000	
Advertising & Promotion	$11,000	$13,819	$11,000		$11,000	
Incentives	$114,000	$494,300	$114,000		$114,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$205,000	$614,339	$205,000		$205,000	
Total Participants	84	294	84		84	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	1,192,968	4,302,601	1,192,968		1,192,968	
Annual kWh Savings at Generator	1,291,651	4,658,512	1,291,651	0	1,291,651	0
Cost per Annual kWh Saved at Generator	$0.1587	$0.1319	$0.1587	$0.0000	$0.1587	$0.0000
Peak kW Savings at Meter	119.841	462.259	119.841		119.841	
Peak kW Savings at Generator	129.754	500.497	129.754	0.000	129.754	0.000
Cost per Peak kW Saved at Generator	$1,579.91	$1,227.46	$1,579.91	$0.00	$1,579.91	$0.00
Utility Ratio	3.23	4.55	3.37		3.52	
Utility NPV	$456,180	$2,183,658	$486,486		$515,794	
Ratepayer Ratio	0.52	0.66	0.55		0.50	
Ratepayer NPV	($598,411)	($1,445,982)	($557,223)		($712,900)	
Participant Ratio	2.65	1.58	2.63		3.05	
Participant NPV	$758,613	$1,582,869	$747,228		$940,760	
Societal Ratio	2.08	1.58	2.14		2.20	
Societal NPV	$594,323	$1,643,593	$627,665		$660,628	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial and Industrial Focused Efficiency					
Status:	Existing					
Year:	**2017 Proposed**	**2017 Actual**	**2018 Proposed**	**2018 Actual**	**2019 Proposed**	**2019 Actual**
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$63,000	$48,135	$63,000		$63,000	
Administration	$13,000	$10,868	$13,000		$13,000	
Evaluation, Measurement & Verification	$2,000	$2,331	$2,000		$2,000	
Advertising & Promotion	$2,000	$554	$2,000		$2,000	
Incentives	$140,000	$148,989	$140,000		$140,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$220,000	$210,877	$220,000		$220,000	
Total Participants	1	2	1		1	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	10%	10%	10%		10%	
Industrial	90%	90%	90%		90%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	1,500,000	1,636,203	1,500,000		1,500,000	
Annual kWh Savings at Generator	1,624,080	1,771,550	1,624,080	0	1,624,080	0
Cost per Annual kWh Saved at Generator	$0.1355	$0.1190	$0.1355	$0.0000	$0.1355	$0.0000
Peak kW Savings at Meter	355.604	271.702	355.604		355.604	
Peak kW Savings at Generator	385.020	294.177	385.020	0.000	385.020	0.000
Cost per Peak kW Saved at Generator	$571.40	$716.84	$571.40	$0.00	$571.40	$0.00
Utility Ratio	4.38	4.08	4.62		4.85	
Utility NPV	$744,449	$649,151	$797,011		$846,847	
Ratepayer Ratio	0.83	0.80	0.88		0.83	
Ratepayer NPV	($201,451)	($217,279)	($139,499)		($221,530)	
Participant Ratio	2.66	2.91	2.63		2.96	
Participant NPV	$704,601	$692,883	$694,777		$832,737	
Societal Ratio	2.98	2.84	3.09		3.19	
Societal NPV	$1,000,401	$782,755	$1,055,128		$1,106,621	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Lighting					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$262,961	$321,296	$262,961		$262,961	
Administration	$8,000	$9,520	$8,000		$8,000	
Evaluation, Measurement & Verification	$2,500	$1,443	$2,500		$2,500	
Advertising & Promotion	$8,000	$5,101	$8,000		$8,000	
Incentives	$669,139	$1,556,728	$669,139		$669,139	
Other	$0	$0	$0		$0	
Total Utility Costs	$950,600	$1,894,087	$950,600		$950,600	
Total Participants	495	797	495		495	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	70%	70%	70%		70%	
Industrial	30%	30%	30%		30%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	5,362,212	15,661,895	5,362,212		5,362,212	
Annual kWh Savings at Generator	5,805,773	16,957,443	5,805,773	0	5,805,773	0
Cost per Annual kWh Saved at Generator	$0.1637	$0.1117	$0.1637	$0.0000	$0.1637	$0.0000
Peak kW Savings at Meter	928.005	2,424.100	928.005		928.005	
Peak kW Savings at Generator	1,004.770	2,624.621	1,004.770	0.000	1,004.770	0.000
Cost per Peak kW Saved at Generator	$946.09	$721.66	$946.09	$0.00	$946.09	$0.00
Utility Ratio	2.93	4.92	3.08		3.22	
Utility NPV	$1,837,821	$7,425,329	$1,978,848		$2,111,709	
Ratepayer Ratio	0.67	0.71	0.71		0.66	
Ratepayer NPV	($1,380,510)	($3,893,820)	($1,208,100)		($1,590,962)	
Participant Ratio	1.37	2.54	1.36		1.54	
Participant NPV	$1,092,415	$8,114,414	$1,059,582		$1,599,131	
Societal Ratio	1.44	2.63	1.49		1.53	
Societal NPV	$1,427,201	$9,162,181	$1,577,237		$1,718,596	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Lighting New Construction					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$22,693	$14,185	$22,693		$22,693	
Administration	$3,000	$5,238	$3,000		$3,000	
Evaluation, Measurement & Verification	$1,000	$407	$1,000		$1,000	
Advertising & Promotion	$6,000	$2,551	$6,000		$6,000	
Incentives	$133,307	$109,078	$133,307		$133,307	
Other	$0	$0	$0		$0	
Total Utility Costs	$166,000	$131,459	$166,000		$166,000	
Total Participants	193	264	193		193	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	70%	70%	70%		70%	
Industrial	30%	30%	30%		30%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	2,632,966	2,746,622	2,632,966		2,632,966	
Annual kWh Savings at Generator	2,850,765	2,973,822	2,850,765	0	2,850,765	0
Cost per Annual kWh Saved at Generator	$0.0582	$0.0442	$0.0582	$0.0000	$0.0582	$0.0000
Peak kW Savings at Meter	383.959	373.836	383.959		383.959	
Peak kW Savings at Generator	415.720	404.760	415.720	0.000	415.720	0.000
Cost per Peak kW Saved at Generator	$399.31	$324.78	$399.31	$0.00	$399.31	$0.00
Utility Ratio	8.80	11.42	9.22		9.62	
Utility NPV	$1,294,814	$1,369,285	$1,364,458		$1,430,926	
Ratepayer Ratio	0.76	0.73	0.80		0.72	
Ratepayer NPV	($472,653)	($559,283)	($384,810)		($627,841)	
Participant Ratio	5.53	4.91	5.48		6.38	
Participant NPV	$1,623,919	$1,693,497	$1,604,879		$1,928,676	
Societal Ratio	6.44	5.24	6.63		6.82	
Societal NPV	$2,126,706	$1,930,497	$2,203,047		$2,277,176	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Midstream Commercial Kitchen Equipment					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$51,000	$57,946	$54,000		$48,000	
Administration	$5,000	$3,927	$5,000		$5,000	
Evaluation, Measurement & Verification	$1,000	$64	$1,000		$1,000	
Advertising & Promotion	$3,500	$0	$6,000		$1,000	
Incentives	$27,700	$0	$55,400		$83,100	
Other	$0	$0	$0		$0	
Total Utility Costs	$88,200	$61,936	$121,400		$138,100	
Total Participants	100	0	200		300	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	516,369	0	1,032,738		1,549,107	
Annual kWh Savings at Generator	559,083	0	1,118,166	0	1,677,249	0
Cost per Annual kWh Saved at Generator	$0.1578	$0.0000	$0.1086	$0.0000	$0.0823	$0.0000
Peak kW Savings at Meter	92.800	0.000	185.600		278.400	
Peak kW Savings at Generator	100.476	0.000	200.953	0.000	301.429	0.000
Cost per Peak kW Saved at Generator	$877.82	$0.00	$604.12	$0.00	$458.15	$0.00
Utility Ratio	3.66	0.00	5.57		7.68	
Utility NPV	$234,242	($61,936)	$555,231		$922,394	
Ratepayer Ratio	0.75	0.00	0.84		0.80	
Ratepayer NPV	($109,648)	($61,936)	($125,528)		($267,438)	
Participant Ratio	4.00	inf.	3.96		4.57	
Participant NPV	$290,678	$0	$574,010		$1,037,502	
Societal Ratio	3.40	0.00	4.26		4.94	
Societal NPV	$377,955	($61,936)	$845,163		$1,361,226	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Motors					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$28,175	$25,132	$28,175		$28,175	
Administration	$5,000	$6,225	$5,000		$5,000	
Evaluation, Measurement & Verification	$1,000	$636	$1,000		$1,000	
Advertising & Promotion	$4,000	$2,686	$4,000		$4,000	
Incentives	$94,825	$70,820	$94,825		$94,825	
Other	$0	$0	$0		$0	
Total Utility Costs	$133,000	$105,500	$133,000		$133,000	
Total Participants	205	139	205		205	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	30%	30%	30%		30%	
Industrial	70%	70%	70%		70%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	679,807	378,669	679,807		679,807	
Annual kWh Savings at Generator	736,040	409,993	736,040	0	736,040	0
Cost per Annual kWh Saved at Generator	$0.1807	$0.2573	$0.1807	$0.0000	$0.1807	$0.0000
Peak kW Savings at Meter	83.299	56.492	83.299		83.299	
Peak kW Savings at Generator	90.190	61.165	90.190	0.000	90.190	0.000
Cost per Peak kW Saved at Generator	$1,474.67	$1,724.84	$1,474.67	$0.00	$1,474.67	$0.00
Utility Ratio	2.85	2.31	2.98		3.11	
Utility NPV	$245,604	$137,778	$263,260		$280,264	
Ratepayer Ratio	0.63	0.63	0.66		0.61	
Ratepayer NPV	($222,794)	($144,722)	($200,305)		($265,462)	
Participant Ratio	1.76	2.96	1.75		2.01	
Participant NPV	$252,813	$242,486	$247,756		$333,714	
Societal Ratio	1.77	2.47	1.82		1.87	
Societal NPV	$285,259	$232,531	$304,611		$323,601	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Recommissioning					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$95,600	$65,899	$95,600		$95,600	
Administration	$1,900	$7,875	$1,900		$1,900	
Evaluation, Measurement & Verification	$500	$712	$500		$500	
Advertising & Promotion	$3,000	$3,163	$3,000		$3,000	
Incentives	$87,000	$81,362	$87,000		$87,000	
Other	$0	$0	$0		$0	
Total Utility Costs	$188,000	$159,012	$188,000		$188,000	
Total Participants	4	5	4		4	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	10%	10%	10%		10%	
Industrial	90%	90%	90%		90%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	2,020,000	701,628	2,020,000		2,020,000	
Annual kWh Savings at Generator	2,187,094	759,667	2,187,094	0	2,187,094	0
Cost per Annual kWh Saved at Generator	$0.0860	$0.2093	$0.0860	$0.0000	$0.0860	$0.0000
Peak kW Savings at Meter	70.000	3.813	70.000		70.000	
Peak kW Savings at Generator	75.790	4.128	75.790	0.000	75.790	0.000
Cost per Peak kW Saved at Generator	$2,480.53	$38,516.52	$2,480.53	$0.00	$2,480.53	$0.00
Utility Ratio	2.42	0.91	2.58		2.73	
Utility NPV	$267,533	($14,318)	$296,633		$324,602	
Ratepayer Ratio	0.53	0.38	0.56		0.56	
Ratepayer NPV	($408,953)	($238,161)	($374,129)		($399,515)	
Participant Ratio	4.03	1.71	4.00		4.29	
Participant NPV	$597,739	$130,540	$591,751		$647,572	
Societal Ratio	2.36	0.85	2.41		2.46	
Societal NPV	$403,972	($40,541)	$420,631		$436,442	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Refrigeration					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$34,860	$47,348	$34,860		$34,860	
Administration	$4,000	$6,775	$4,000		$4,000	
Evaluation, Measurement & Verification	$1,000	$252	$1,000		$1,000	
Advertising & Promotion	$5,000	$2,887	$5,000		$5,000	
Incentives	$85,225	$110,892	$85,225		$85,225	
Other	$0	$0	$0		$0	
Total Utility Costs	$130,085	$168,155	$130,085		$130,085	
Total Participants	86	127	86		86	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	1,155,485	1,255,933	1,155,485		1,155,485	
Annual kWh Savings at Generator	1,251,067	1,359,824	1,251,067	0	1,251,067	0
Cost per Annual kWh Saved at Generator	$0.1040	$0.1237	$0.1040	$0.0000	$0.1040	$0.0000
Peak kW Savings at Meter	166.160	180.919	166.160		166.160	
Peak kW Savings at Generator	179.904	195.885	179.904	0.000	179.904	0.000
Cost per Peak kW Saved at Generator	$723.08	$858.44	$723.08	$0.00	$723.08	$0.00
Utility Ratio	3.13	2.40	3.32		3.49	
Utility NPV	$277,039	$235,090	$301,599		$324,039	
Ratepayer Ratio	0.66	0.61	0.70		0.68	
Ratepayer NPV	($213,395)	($259,541)	($184,214)		($215,502)	
Participant Ratio	4.36	3.43	4.32		4.73	
Participant NPV	$461,037	$452,221	$456,202		$512,413	
Societal Ratio	3.40	2.52	3.52		3.63	
Societal NPV	$437,693	$353,944	$459,389		$479,035	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Roof Top Unit Efficiency (Pilot)					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$26,325	$31,194	$26,325		$26,325	
Administration	$2,000	$5,228	$2,000		$2,000	
Evaluation, Measurement & Verification	$2,000	$0	$2,000		$2,000	
Advertising & Promotion	$1,000	$0	$1,000		$1,000	
Incentives	$20,560	$0	$20,560		$20,560	
Other	$0	$0	$0		$0	
Total Utility Costs	$51,885	$36,422	$51,885		$51,885	
Total Participants	20	0	20		20	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	489,540	0	489,540		489,540	
Annual kWh Savings at Generator	530,035	0	530,035	0	530,035	0
Cost per Annual kWh Saved at Generator	$0.0979	$0.0000	$0.0979	$0.0000	$0.0979	$0.0000
Peak kW Savings at Meter	64.500	0.000	64.500		64.500	
Peak kW Savings at Generator	69.835	0.000	69.835	0.000	69.835	0.000
Cost per Peak kW Saved at Generator	$742.96	$0.00	$742.96	$0.00	$742.96	$0.00
Utility Ratio	2.14	0.00	2.26		2.37	
Utility NPV	$59,155	($36,422)	$65,483		$70,834	
Ratepayer Ratio	0.49	0.00	0.52		0.51	
Ratepayer NPV	($117,769)	($36,422)	($110,009)		($118,104)	
Participant Ratio	0.95	inf.	0.94		1.01	
Participant NPV	($11,342)	$0	($12,840)		$1,227	
Societal Ratio	0.66	0.00	0.67		0.68	
Societal NPV	($84,164)	($36,422)	($80,895)		($78,556)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Advertising and Education					
Status:	Existing					
Year:	**2017 Proposed**	**2017 Actual**	**2018 Proposed**	**2018 Actual**	**2019 Proposed**	**2019 Actual**
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$22,500	$23,220	$22,500		$22,500	
Administration	$1,500	$780	$1,500		$1,500	
Evaluation, Measurement & Verification	$500	$0	$500		$500	
Advertising & Promotion	$500	$615	$500		$500	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$25,000	$24,615	$25,000		$25,000	
Total Participants	100	76	100		100	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($25,000)	($24,615)	($25,000)		($25,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($25,000)	($24,615)	($25,000)		($25,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($25,000)	($24,615)	($25,000)		($25,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Compressed Air Audits					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$3,000	$187	$3,000		$3,000	
Administration	$500	$97	$500		$500	
Evaluation, Measurement & Verification	$500	$61	$500		$500	
Advertising & Promotion	$1,000	$554	$1,000		$1,000	
Incentives	$0	$4,940	$0		$0	
Other	$15,000	$0	$15,000		$15,000	
Total Utility Costs	$20,000	$5,839	$20,000		$20,000	
Total Participants	4	1	4		4	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	10%	10%	10%		10%	
Industrial	90%	90%	90%		90%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($20,000)	($5,839)	($20,000)		($20,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($20,000)	($5,839)	($20,000)		($20,000)	
Participant Ratio	inf.	0.80	inf.		inf.	
Participant NPV	$0	($1,235)	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($20,000)	($7,074)	($20,000)		($20,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Financing					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$28,500	$1,497	$28,500		$28,500	
Administration	$3,500	$6,223	$3,500		$3,500	
Evaluation, Measurement & Verification	$1,000	$250	$1,000		$1,000	
Advertising & Promotion	$8,000	$1,891	$8,000		$8,000	
Incentives	$0	$5,475	$0		$0	
Other	$9,000	$0	$9,000		$9,000	
Total Utility Costs	$50,000	$15,336	$50,000		$50,000	
Total Participants	5	0	5		5	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($50,000)	($15,336)	($50,000)		($50,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($50,000)	($15,336)	($50,000)		($50,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$5,475	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($50,000)	($9,861)	($50,000)		($50,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Commercial Implementation and Training					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$54,000	$31,078	$54,000		$54,000	
Administration	$2,000	$2,717	$2,000		$2,000	
Evaluation, Measurement & Verification	$2,000	$2,559	$2,000		$2,000	
Advertising & Promotion	$2,000	$780	$2,000		$2,000	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$60,000	$37,134	$60,000		$60,000	
Total Participants	250	507	250		250	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	90%	90%	90%		90%	
Industrial	10%	10%	10%		10%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($60,000)	($37,134)	($60,000)		($60,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($60,000)	($37,134)	($60,000)		($60,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($60,000)	($37,134)	($60,000)		($60,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Company-Owned Street & Area Lighting					
Status:	New					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$430,799	$0	$430,799		$430,799	
Administration	$164,460	$0	$164,460		$164,460	
Evaluation, Measurement & Verification	$3,000	$0	$3,000		$3,000	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$180,576	$0	$180,576		$180,576	
Other	$525,011	$0	$525,011		$525,011	
Total Utility Costs	$1,303,846	$0	$1,303,846		$1,303,846	
Total Participants	3,941	0	3,941		3,941	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	2,213,413	0	2,213,413		2,213,413	
Annual kWh Savings at Generator	2,396,506	0	2,396,506	0	2,396,506	0
Cost per Annual kWh Saved at Generator	$0.5441	$0.0000	$0.5441	$0.0000	$0.5441	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.89	inf.	0.91		0.94	
Utility NPV	($145,992)	$0	($114,521)		($83,792)	
Ratepayer Ratio	0.33	inf.	0.34		0.31	
Ratepayer NPV	($2,351,810)	$0	($2,296,757)		($2,779,416)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$2,488,302	$0	$2,463,632		$3,000,737	
Societal Ratio	2.05	inf.	2.09		2.13	
Societal NPV	$1,175,854	$0	$1,219,387		$1,265,189	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Publicly-Owned Property Solar					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$4,000	$4,186	$4,000		$4,000	
Administration	$3,000	$5,529	$3,000		$3,000	
Evaluation, Measurement & Verification	$2,000	$184	$2,000		$2,000	
Advertising & Promotion	$1,000	$62	$1,000		$1,000	
Incentives	$103,125	$0	$103,125		$103,125	
Other	$1,735	$0	$1,735		$1,735	
Total Utility Costs	$114,860	$9,961	$114,860		$114,860	
Total Participants	9	0	9		9	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	100%	100%	100%		100%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	0%	0%	0%		0%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	107,250	0	107,252		107,252	
Annual kWh Savings at Generator	116,122	0	116,124	0	116,124	0
Cost per Annual kWh Saved at Generator	$0.9891	$0.0000	$0.9891	$0.0000	$0.9891	$0.0000
Peak kW Savings at Meter	42.937	0.000	42.937		42.937	
Peak kW Savings at Generator	46.488	0.000	46.488	0.000	46.488	0.000
Cost per Peak kW Saved at Generator	$2,470.73	$0.00	$2,470.73	$0.00	$2,470.73	$0.00
Utility Ratio	0.92	0.00	0.93		0.98	
Utility NPV	($9,617)	($9,961)	($7,646)		($1,865)	
Ratepayer Ratio	0.47	0.00	0.48		0.45	
Ratepayer NPV	($117,321)	($9,961)	($117,217)		($137,214)	
Participant Ratio	0.71	inf.	0.71		0.80	
Participant NPV	($89,444)	$0	($87,491)		($60,523)	
Societal Ratio	0.63	0.00	0.63		0.66	
Societal NPV	($116,334)	($9,961)	($115,805)		($108,348)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Planning - Regulatory Affairs					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$75,828	$0		$0	
Administration	$0	$73,967	$0		$0	
Evaluation, Measurement & Verification	$0	$32,175	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$300,000	$250	$300,000		$300,000	
Total Utility Costs	$300,000	$182,220	$300,000		$300,000	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($300,000)	($182,220)	($300,000)		($300,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($300,000)	($182,220)	($300,000)		($300,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($300,000)	($182,220)	($300,000)		($300,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Research and Deveopment					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$80,754	$0		$0	
Administration	$0	$40,092	$0		$0	
Evaluation, Measurement & Verification	$0	$0	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$180,000	$0	$180,000		$180,000	
Total Utility Costs	$180,000	$120,845	$180,000		$180,000	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($180,000)	($120,845)	($180,000)		($180,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($180,000)	($120,845)	($180,000)		($180,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($180,000)	($120,845)	($180,000)		($180,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	NGEA - Regulatory Assessments					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$0	$0		$0	
Administration	$0	$0	$0		$0	
Evaluation, Measurement & Verification	$0	$0	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$110,000	$108,516	$110,000		$110,000	
Total Utility Costs	$110,000	$108,516	$110,000		$110,000	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($110,000)	($108,516)	($110,000)		($110,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($110,000)	($108,516)	($110,000)		($110,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($110,000)	($108,516)	($110,000)		($110,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	PUC Assessments					
Status:	Existing					
Year:	2017 Proposed	2017 Actual	2018 Proposed	2018 Actual	2019 Proposed	2019 Actual
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$0	$0		$0	
Administration	$0	$0	$0		$0	
Evaluation, Measurement & Verification	$0	$0	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$20,000	$5,618	$20,000		$20,000	
Total Utility Costs	$20,000	$5,618	$20,000		$20,000	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($20,000)	($5,618)	($20,000)		($20,000)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($20,000)	($5,618)	($20,000)		($20,000)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($20,000)	($5,618)	($20,000)		($20,000)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

	Made in Minnesota Solar Energy Assessment					
Category:						
Status:	Existing					
Year:	**2017 Proposed**	**2017 Actual**	**2018 Proposed**	**2018 Actual**	**2019 Proposed**	**2019 Actual**
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$0	$0		$0	
Administration	$0	$0	$0		$0	
Evaluation, Measurement & Verification	$0	$0	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$114,860	$114,860	$114,860		$114,860	
Total Utility Costs	$114,860	$114,860	$114,860		$114,860	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	72,464	80,889	0		0	
Annual kWh Savings at Generator	78,458	87,580	0	0	0	0
Cost per Annual kWh Saved at Generator	$1.4640	$1.3115	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	0.00	0.00	0.00		0.00	
Utility NPV	($114,860)	($114,860)	($114,860)		($114,860)	
Ratepayer Ratio	0.00	0.00	0.00		0.00	
Ratepayer NPV	($114,860)	($114,860)	($114,860)		($114,860)	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	0.00	0.00	0.00		0.00	
Societal NPV	($114,860)	($114,860)	($114,860)		($114,860)	

* Percentage derived from 2010 Census data.

Electric Conservation Project Information Sheet
Otter Tail Power Company

Category:	Transmission & Distribution Cost Study					
Status:						
Year:	**2017 Proposed**	**2017 Actual**	**2018 Proposed**	**2018 Actual**	**2019 Proposed**	**2019 Actual**
kWh Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
kW Line Loss Factor	7.640%	7.640%	7.640%	7.640%	7.640%	7.640%
Utility Costs						
Delivery	$0	$13,374	$0		$0	
Administration	$0	$7,367	$0		$0	
Evaluation, Measurement & Verification	$0	$11,327	$0		$0	
Advertising & Promotion	$0	$0	$0		$0	
Incentives	$0	$0	$0		$0	
Other	$0	$0	$0		$0	
Total Utility Costs	$0	$32,067	$0		$0	
Total Participants	0	0	0		0	
% of Spending by Customer Segments						
Residential	0%	0%	0%		0%	
Commercial	0%	0%	0%		0%	
Industrial	0%	0%	0%		0%	
Farm	0%	0%	0%		0%	
Other	100%	100%	100%		100%	
Total % of Spending	100%	100%	100%		100%	
Low-Income Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Renter Participation*						
Participants % (% of Total Participants)						
Budget % (% of Total Utility Costs)						
Energy Savings						
Annual kWh Savings at Meter	0	0	0		0	
Annual kWh Savings at Generator	0	0	0	0	0	0
Cost per Annual kWh Saved at Generator	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
Peak kW Savings at Meter	0.000	0.000	0.000		0.000	
Peak kW Savings at Generator	0.000	0.000	0.000	0.000	0.000	0.000
Cost per Peak kW Saved at Generator	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Utility Ratio	inf.	0.00	inf.		inf.	
Utility NPV	$0	($32,067)	$0		$0	
Ratepayer Ratio	inf.	0.00	inf.		inf.	
Ratepayer NPV	$0	($32,067)	$0		$0	
Participant Ratio	inf.	inf.	inf.		inf.	
Participant NPV	$0	$0	$0		$0	
Societal Ratio	inf.	0.00	inf.		inf.	
Societal NPV	$0	($32,067)	$0		$0	

* Percentage derived from 2010 Census data.

CERTIFICATE OF SERVICE

RE: In the Matter of Otter Tail Power Company's 2017 Demand Side Management Financial Incentive Project, Annual Filing to Update the Conservation Improvement Project Rider, and 2017 CIP Status Report
Docket Nos. E017/M-18-___, E017/CIP-16-116.01

I, Jana Hrdlicka, hereby certify that I have this day served a copy of the following, or a summary thereof, on Daniel P. Wolf and Sharon Ferguson by e-filing, and to all other persons on the attached service list by electronic service or by First Class mail.

Otter Tail Power Company
Initial Filing

Dated this **30th** day of **March**, **2018**

/s/ JANA HRDLICKA
Jana Hrdlicka
Regulatory Filing Coordinator
Otter Tail Power Company
215 South Cascade Street
Fergus Falls MN 56537
(218) 739-8879

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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Ian	Dobson	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
James C.	Erickson	jericksonkbc@gmail.com	Kelly Bay Consulting	17 Quechee St Superior, WI 54880-4421	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Bruce	Gerhardson	bgerhardson@otpco.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Shane	Henriksen	shane.henriksen@enbridge.com	Enbridge Energy Company, Inc.	1409 Hammond Ave FL 2 Superior, WI 54880	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
James D.	Larson	james.larson@avantenergy.com	Avant Energy Services	220 S 6th St Ste 1300 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Cary	Stephenson	cStephenson@otpco.com	Otter Tail Power Company	215 South Cascade Street Fergus Falls, MN 56537	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Stuart	Tommerdahl	stommerdahl@otpco.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 56537	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_GENERAL SERVICE LIST